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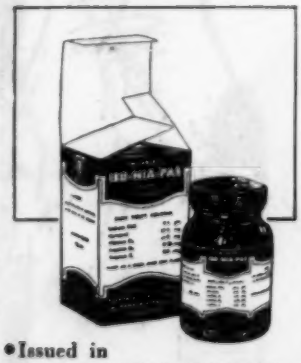

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TABLE OF CONTENTS

ORIGINAL ARTICLES: Page

1. Virological Aspects of Kyasanur Forest Disease —Telford H. Work 111
2. Clinical Observations on Kyasanur Forest Disease Cases—R. Lakshmana Rao 113
3. Observations on the Properties of a Piperidinomethylpyrazolone Derivative—A. N. Bose and Amulya Ray 116

PRACTITIONERS' SERIES:

Psychotherapy and the General Practitioner —D. Satya Nand 120

SPECIAL ARTICLES:

1. New Virus Disease—Kyasanur Forest Disease —D. P. Narasimha Murthy 125
2. Colposcopy in a Family Planning Clinic —Melba Kamat 127

CASE NOTES:

1. Familial Leprosy—N. Mukerjee and S. Ghosh 129

CASE NOTES—Contd. Page

2. Erythema Exudative Multiforme—Ramesh Agarwal 131
3. Congenital Syphilitic Retrobulbar Neuritis —S. Mishra 132
4. Trichomonas Vaginalis Infestation of Suburethral Canal—M. C. Rama Ayyangar ... 133

EDITORIAL:

Medical Teachers 135

CURRENT MEDICAL LITERATURE 137

CURRENT TOPIC 140

NOTES AND NEWS 147

CORRESPONDENCE 149

REVIEWS 149

OBITUARY 150

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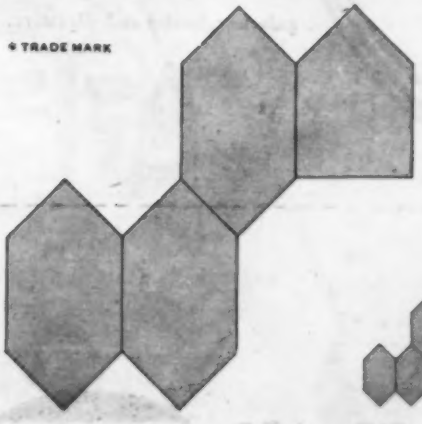

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INDEX TO ADVERTISERS

	Page
Allen & Hanburys Ltd.	iv
Alembic Chemical Works Co. Ltd.	xii
Albert David Ltd.	xxxv
Adcco Ltd.	xxx
Antiseptic	xxxii
Bengal Chemical & Pharm. Works Ltd.	Front Cover
Burroughs Wellcome & Co. (I) Pvt. Ltd.	xv
Bengal Immunity Co. Ltd.	xxv
Calcutta Chemical Co., Ltd.	Back Cover
Corn Products Co. (I) Private Ltd.	x
Crookes Laboratories Ltd.	xvii
Capco Private Ltd.	xxii
Chemo-Pharma Laboratories Ltd.	xxvi
Dey's Medical Stores Private Ltd.	xxix
Eastern Drug Co. Ltd.	ii
East India Pharmaceutical Works Ltd.	xx
Franco Indian United Laboratories	vii, xi
G. D. Pharmaceuticals Private Ltd.	iii
German Remedies & Trading Co. (P) Ltd.	vi
Glaxo Laboratories (I) Private Ltd.	xiii
G. D. A. Chemicals Ltd.	xxxiii
Hindustan Lever Ltd.	viii, xiv
Himalaya Drug Co.	xxvi
Hind Chemicals Ltd.	xxvii
Ilford-Selo (India) Private Ltd.	xxi
Indian Health Institute & Laboratory Ltd.	xxviii
Janak Manufacturing Works	xxviii
John Wyeth & Brother Ltd.	xxxvi
Lederle Laboratories (I) Private Ltd.	i
May & Baker (India) Private Ltd.	xiv
Menley & James Ltd.	xviii, xxxiii
Mendine Pharmaceutical Works	xxviii
Microfilm & Photocopy Service Unit	xxvii
Neo-Pharma Private Ltd.	v, ix, xix
Nettlefolds of India Private Ltd.	xvi
Navaratna Pharmaceutical Laboratories	xxviii
Pfizer Eastern Corporation (Ravison Pharmaceuticals (P) Ltd.)	2nd Cover
Parke, Davis & Co. Ltd.	xxiv
Raptakos, Brett & Co. Private Ltd.	x
Ranbaxy & Co. Private Ltd.	xxx
Suhrid Geigy Trading Private Ltd.	xxiii
Shanti Trading Company	xxvii
Scientific Publication Concern	xxviii
Sarabhai Chemicals	xxxi
Stadmed Private Ltd.	xxxii
Unichem Laboratories	xxiii
W. T. Suren & Co. Private Ltd.	xxxiv

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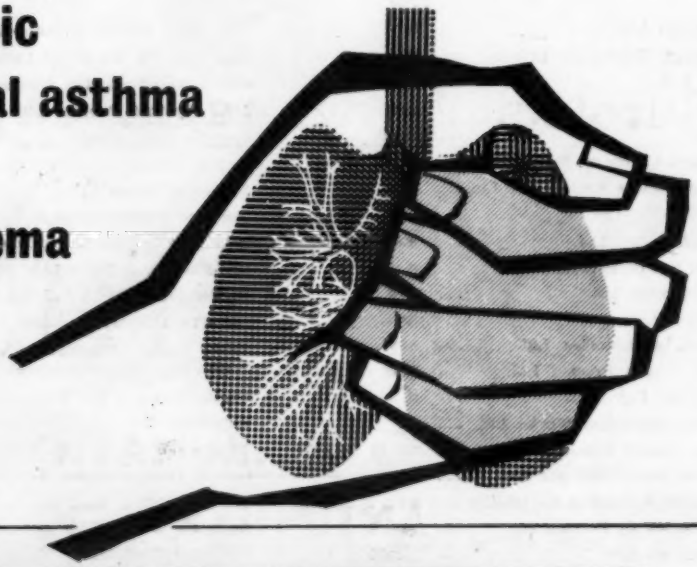

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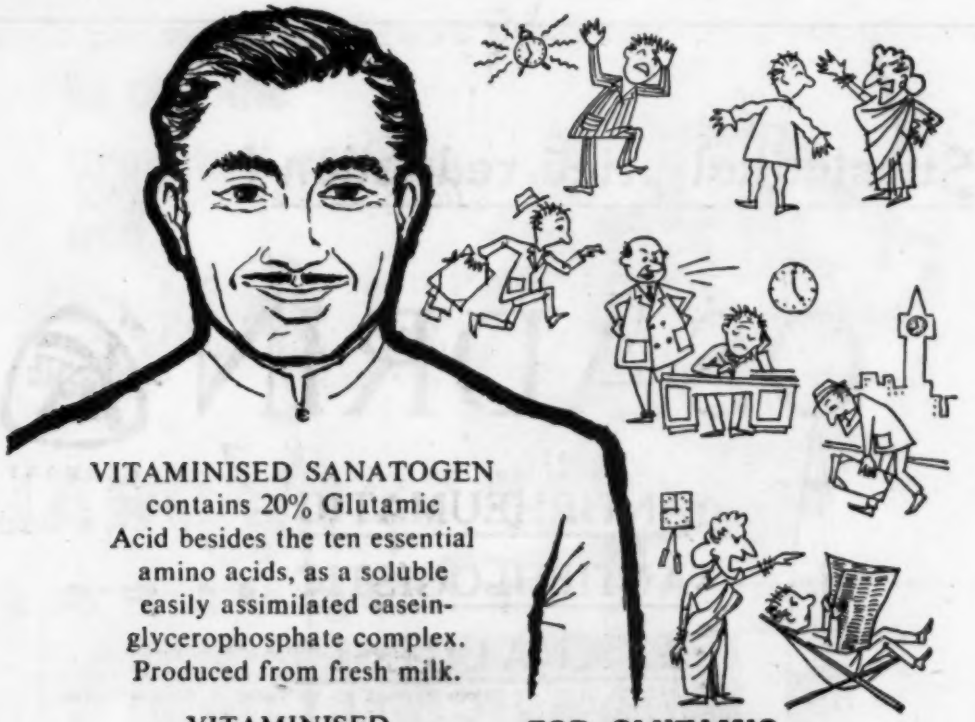

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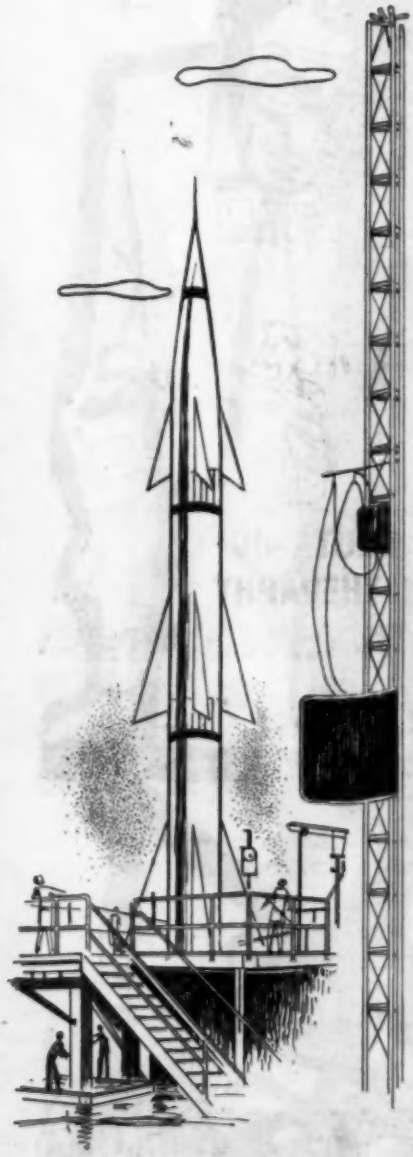

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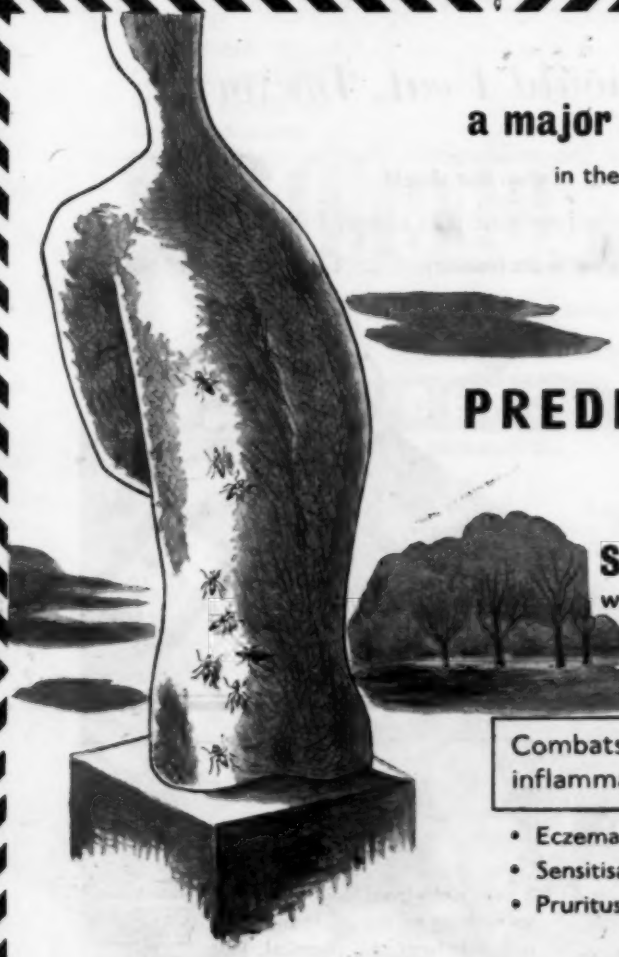

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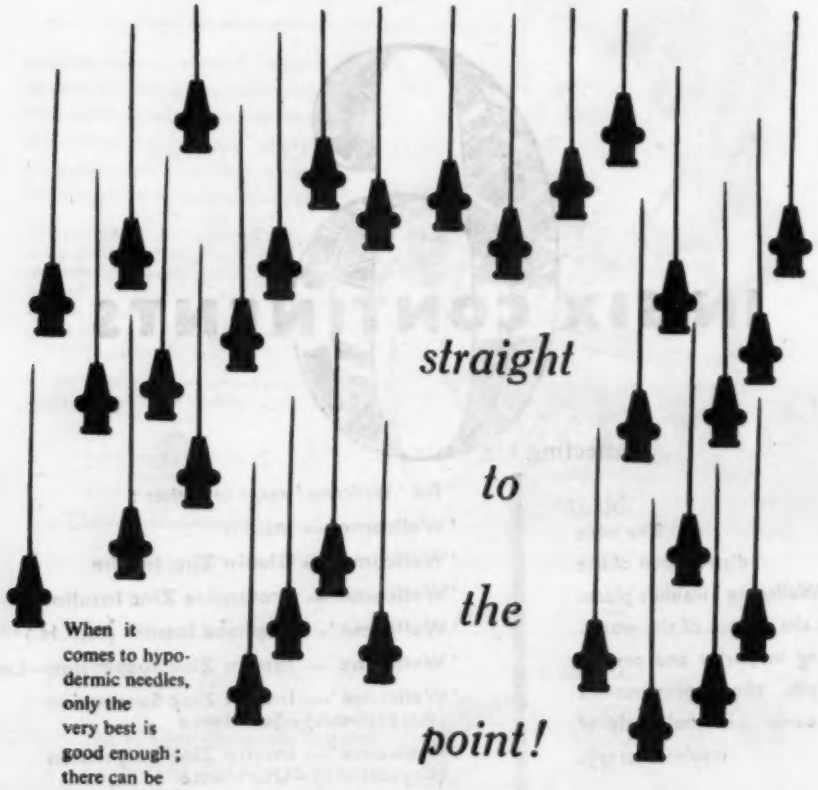

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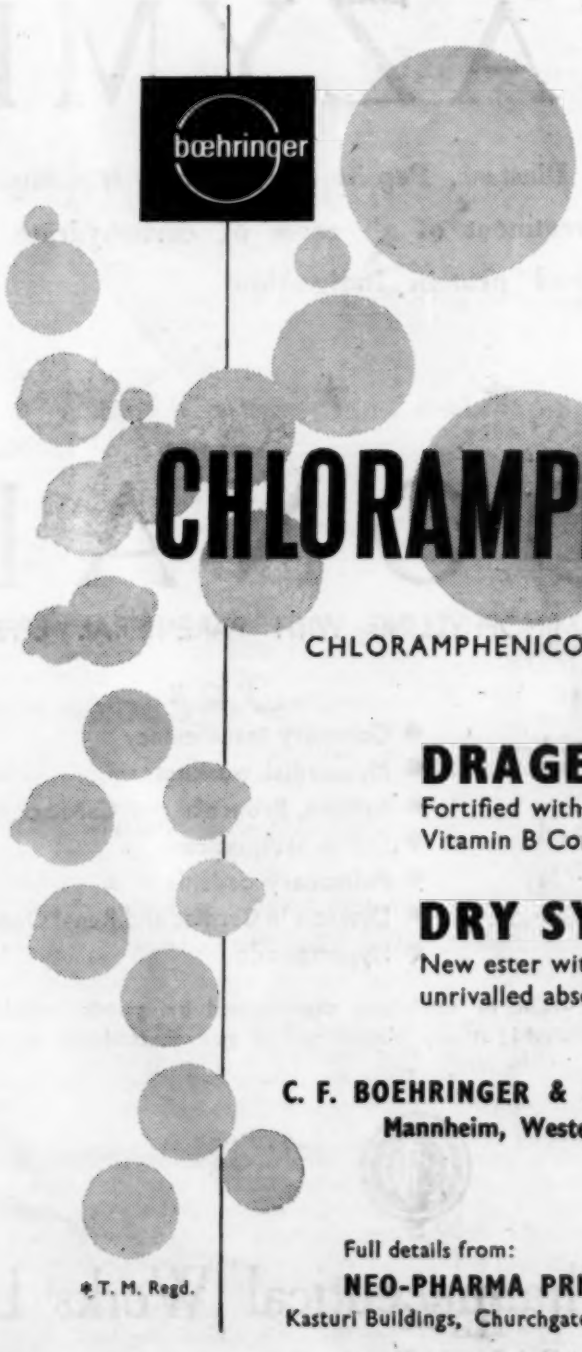

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CALCUTTA
AUGUST 1, 1958

ORIGINAL ARTICLES

VIROLOGICAL ASPECTS OF KYASANUR FOREST DISEASE*

TELFORD H. WORK, M.D., D.T.M. & H., M.P.H.

Director, Indian Council of Medical Research, Virus Research Centre, Poona and Staff Member, The Rockefeller Foundation

INTRODUCTION

When attempting to settle and develop forested areas of eastern Siberia in the early 1930's, the Russians were faced with problems similar to those presented by the discovery of Kyasanur Forest Disease (KFD) in Shimoga District of Mysore. In 1932 the Russians encountered, in the maritime provinces of Siberia, a human central nervous system disease which they originally thought to be Japanese B encephalitis (JBE). As information accumulated, however, there were striking differences from JBE which had previously been described in Japan. These were a spring and summer prevalence compared to a late summer and autumnal occurrence of JBE. The disease occurred during the season in that far northern latitude when mosquitoes had not bred in large enough numbers to extensively transmit the virus of mosquito-borne JBE. It did occur at a time when forest ticks were at maximum activity (Silber and Soloviev, 1946 ; Olitsky and Casals, 1952).

The disease itself differed markedly from JBE in causing a high incidence of shoulder girdle paralysis. There was a mortality rate of something more than 20 per cent and some patients which survived were mentally deficient. Serological diagnosis did not match that of JBE and a distinctly new virus, which has become known as Russian Spring Summer Encephalitis (RSSE) virus, was isolated in 1937 by Silber *et al* (1938) and was identified as the aetiological agent.

In 1943 RSSE virus was shown to be closely related to the virus causing louping ill in sheep (Casals, 1944) and occasionally in man in Scotland ; a disease which has been recognized there since early in the nineteenth century. Since then, Russian workers have described both an eastern and western type of RSSE encephalitis as well as finding that such infections as eastern European diphasic meningo-encephalitis of Yugoslavia, Austria, Czechoslovakia, Poland, Western Russia and now Finland and Sweden, and Omsk and Byelorussian haemorrhagic fevers are caused by closely related viruses. Because RSSE virus was the first of this group to be isolated and because at least four different clinical entities result from infection with such closely related viruses, they are grouped as members of the Russian Spring-Summer (RSS) virus complex.

Of particular interest here are the viruses of visceral haemorrhagic disease rather than those causing central nervous system (CNS) signs, because Kyasanur Forest Disease of India more closely simulates the haemorrhagic fevers of Russia (Gajdusek, 1953 and 1956).

Work of Casals and co-workers (Casals and Brown, 1954 ; Clarke and Casals, 1955 ; Casals, 1957) during the past several years has shown that viruses isolated from mosquitoes, ticks, sand-flies etc. can be classified serologically into different groups—not always pertaining to the type of arth-

* Read at the 34th All-India Medical Conference, Bangalore, December 1957.

ropod vector or epidemiology but rather to certain antigenic affinities. Thus, mosquito-borne yellow fever virus is a member of the B group of arbor viruses more closely related to the tick-borne RSS viruses than to mosquito-borne encephalitis viruses, such as Western Equine and Venezuelan. There are more than twenty group B arbor viruses recognized, most of them known to cause human disease, compared to a lesser number in group A and smaller numbers in other groups which are just being classified. This classification has been based on the discovery that many arbor viruses, under certain conditions, cause haemagglutination of avian red blood cells. This has made possible development of a haemagglutination inhibition (HI) test in which serum containing group specific antibodies to any number of related viruses will inhibit agglutination of red cells in the presence of a specific antigen to any of a number of viruses in the group. By this method the exposure of a patient to any virus in the B group can be determined by a single test. More definitive complement fixation and neutralization tests can then be applied to determine more specifically what virus actually caused the infection.

This was, in fact, the procedure used to determine that the first cases of Kyasanur Forest Disease studied in March 1957 had suffered from infection with someone of the group B arbor viruses. This preceded demonstration that the viruses isolated from dead monkeys and human patients suffering from the disease were the same. The actual character and identity of the virus was determined by infection of experimental animals such as the rhesus monkey and white mice. The virus was propagated in these animals for further characterization and convalescent serum containing specific antibodies to the virus produced.

The original virus isolations were accomplished in white mice by intracerebral inoculation of serum and organs of the autopsied monkeys found sick or dead in the forest and from serum of the two acutely ill human cases seen in Shigga village. Both infant (2-day old) and adult mice were inoculated ; the infant mice sickening on the third day and the adults on the fifth or sixth day. Serum inoculated into rhesus monkeys caused an abortive fever but no other sign of disease. However, virus was recovered from blood collected on the fourth to seventh days and a substantial amount of specific neutralizing antibody against KFD virus was present in the convalescent bleedings.

These studies not only determined that Kyasanur Forest Disease was a group B arbor virus infection, that the virus isolated from serum of diseased monkeys and human beings was the same and that it was related to the RSS virus complex, but provided means for diagnosing cases and studying the epidemiology of the infection in the Sagar-Sorab affected area of Shimoga District.

The development of facilities for clinical study and treatment of cases in Sagar Combined Hospital and reported cases in the villages has been detailed previously (Work *et al*, 1957 ; Lakshmana Rao, 1958). These cases were studied virologically and serologically and a summary of the results follows :

Material

The sudden and striking onset of Kyasanur Forest Disease provided an accurate date from which the progress of the virus infection could be calculated. Attempts were made to isolate virus from forty-five sera collected from 36 patients in the period two days before to 14 days after onset of the disease. Thirty-seven isolations were made with only three failures in the first ten days after onset. Five attempts from the eleventh through fourteenth days failed to yield virus. Therefore, isolation of virus from blood serum of the patient collected during the first ten days of the disease is the surest method of obtaining an early laboratory diagnosis.

When it is remembered that these sera were not inoculated until several days after collection and only after more than 500 miles rail transport on wet ice from Sagar to Poona, the durability of the virus in human serum is obvious. This durability contributes to greater probability of isolation.

Results

Of eight specimens of cerebrospinal fluid collected during the first ten days of the disease, only four have yielded virus. The agent has also been isolated from various organs obtained from three autopsies which have been done so far. These patients were all males between the ages of 35 and 55. They died on the seventh, eighth and ninth day of disease. The virus was isolated from heart muscle, skeletal muscle, liver, spleen, lung and kidney, but not from brain.

Of 112 reported cases from 37 localities, 44 from twenty villages gave evidence by virus isolation or positive serology of infection with Kyasanur Forest Disease virus. This does not include those picked up on routine serological survey of other localities, the data for which are under analysis.

Of the 44 positive cases, 40 were in males and only 4 in females. Thirty-one of the cases were

between twenty and forty years of age, while only four were in children under fifteen.

Comments

Projection of this data on a map indicates that the spread of the infection was rapid.

KFD virus has been isolated from serum and/or other tissues of three langur (black-faced) and three bonnet macaque (red-faced) monkeys autopsied after being found moribund or dead in the forest. It has also been isolated from more than a dozen pools of *Haemaphysalis* ticks collected in infected forest area (Trapido *et al*, 1958). Specific neutralizing antibodies to KFD virus have been found in rodents and other small mammals in the same localities, although none of these small animal species have otherwise shown any evidence of the disease and those collected outside the presently infected area do not show any antibodies.

Even though man-to-man transmission in such congested places as village huts where patients sleep next to healthy members of the family has not been observed the virus is highly infectious to human beings. Nine infections have occurred in the professional and technical personnel of the VRC in Poona during the past eight months of intensive investigation of this problem. Two infections occurred in the New York Laboratories of The Rockefeller Foundation after they received the virus for study. Three infections occurred in technical personnel of the Walter Reed Institute for Medical Research in Washington after they generously undertook the task of large-scale production of vaccine for the prevention of Kyasanur Forest Disease in the affected area in Mysore. Two of these infections occurred in persons who had demonstrable antibodies prior to infection.

Summary

In summary it can be said that a virus belonging to the Russian Spring-Summer complex has been isolated from both man and monkeys suffering a prolonged febrile illness in the affected Malnad area of Shimoga District in Mysore. The virus infection has been named Kyasanur Forest Disease, in reference to the locality where the virus was first recovered from monkeys and where human cases have also occurred. The virus is almost invariably present in the blood serum from at least two days prior to the onset and through the first ten days of the disease. The disease is an affection of the haemopoietic and visceral organs as contrasted to central nervous system disease caused by related tick-borne RSS viruses in Russia and other eastern European countries. The virus has been isolated from heart and skeletal muscle, lung, liver, spleen and kidney, but not, so far, from human brain. A few isolations have been made from CSF which probably only reflects a high concentration of the virus in blood.

Laboratory diagnosis of Kyasanur Forest Disease is dependent on isolation of the virus from blood serum during the first ten days of the disease or demonstration of development and rise in titre of specific humoral complement fixing and neutralizing antibodies in convalescent sera of suspected cases from which no virus was isolated.

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CLINICAL OBSERVATIONS ON KYASANUR FOREST DISEASE CASES*

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This paper is an introduction to the clinical aspects of Kyasanur Forest Disease. Much remains to be done to correlate the clinical findings with the data derived from laboratory investigations.

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* Read at the 34th All-India Medical Conference, Bangalore, December 1957.

Introduction

During the month of May 1956, two patients were treated at Sagar Hospital with the provisional diagnosis of enteric fever for complaints of continuous fever, headache, body pains and abdominal discomfort. One of these two cases had mental confusion and drowsiness. Widal and Weil-Felix reactions were, however, negative.

In March 1957, a year later, six patients suffering from the same complaints were treated with the same provisional diagnosis. One of these terminated fatally. During the same period local medical practitioners were called upon to treat similar baffling cases. The villagers were associating this disease with the heavy monkey mortality, then prevalent in the forest around the villages. On the 4th April 1957, these cases were discussed with Dr. Work and Dr. Trapido, from the Virus Research Centre (VRC) Poona, who were investigating the cause of monkey mortality in the infected area.

Patients from the infected area, with complaints of continuous fever, headache, body pains, suffusion of the conjunctiva and prostration, and especially those showing leucopenia were provisionally diagnosed as Kyasanur Forest Disease.

Two illustrative cases are reported below:

Case Reports

Case 1—M.H. was admitted on 8-5-57 for complaints of fever, severe headache, body pains and vomiting. Two months earlier his brother had died four days after admission to the hospital with the complaints of extreme prostration, moderate temperature, headache, tremors and drowsiness. Subsequently his father suffered similar symptoms and died in his village without treatment. The patient used to visit the forest frequently and had noticed monkey deaths. On 7-5-57 he abruptly felt chilly and had backache, limb pains and disturbed sleep on the following night. Next day, on his way to the forest again, he developed intolerable headache and vomiting, and was forced to seek admission to the hospital.

On examination there was marked prostration. Conjunctivae were injected, the temperature was 103°F, the pulse rate was 96 per minute and respiration 20 per minute. The liver and spleen were not palpable. The epigastric region was tender. Blood pressure was normal. No neurological signs could be elicited except neck rigidity. A lumbar puncture was done; a jet of clear C.S.F. amounting to 30 c.c. was tapped.

Laboratory investigations—Total W.B.C. 3,800 per c.mm. with the differential count within normal limits. Albumen and casts were found in the urine. Lumbar puncture showed increased pressure, other findings were all normal.

Treatment—The patient was treated symptomatically with aspirin and fluids. The temperature continued for a week and he was discharged at his own request during convalescence.

Case 2—R.H., male, aged 40 years, was admitted on 24-4-57 in a state of extreme prostration, dehydration, mental confusion, and restlessness with slurred speech. There was history of having gone into the forest prior to the onset of the disease. A week before the admission, he had a chill followed by headache, body pains and fever. Three days later, he developed tarry loose motions, frequency being five to six times a day lasting for two days.

On examination the patient was found to be dyspnoeic and anxious. Pulse was 100 per minute and feeble and respiration 40 per minute. The temperature was normal. Rales and crepitations were heard on auscultation over both the lung bases. The liver and spleen were not palpable. All quadrants of the abdomen were tender. Kernig's sign was positive.

Laboratory investigations—W.B.C. 5,600 per c.mm. with the differential count within normal limits. Lumbar puncture showed increased tension only.

Treatment—1,800 c.c. of I.V. glucose saline was given with coramine. The patient became comatose four hours after admission and the stage of coma lasted for three hours, death supervening.

Autopsy report—No gross lesions could be seen in any organ.

Clinical Picture

Onset is sudden usually with chill followed by headache. The patient is struck down wherever he is. Chilly sensation may be manifest off and on during the course of the fever. Headache is frontal and very severe in the early stage. Neck-rigidity may be present with positive Kernig's sign. Body pains are cramp-like in nature and are more intense at the nape of the neck, low back region and calf muscles. These are simultaneously manifest with headache and are observed to continue together, even though the fever has subsided. Fever usually follows headache, rising rapidly to from 102 to 104°F. The temperature is continuous and lasts for 5 to 12 days or more. Insomnia is not uncommon. At this stage the patient may be found mentally confused, restless, and tossing about in the bed. Occasional morning remissions are observed. There may be recurrence of temperature after an afebrile period of 1 to 2 weeks. Suffusion of the conjunctiva is almost always present in the first few days of the disease. Discrete, occasionally tender, lymph-nodes, particularly cervical, may be palpable in some cases. Suffusion of the palate (posterior aspect) with maculopapular haemorrhagic spots, interconnecting the congested capillary network is seen in the majority of cases. Prostration is very severe, out of proportion to the duration of the disease and fever. Gastro-intestinal symp-

toms may be manifest from the beginning and the abdomen is tender during these manifestations. Haemorrhagic complications occur during the middle of the first week. Death usually occurs within 8 to 12 days after onset of the disease. Slurred speech, listlessness, tremors and dyspnoea are features of severe cases indicating grave prognosis. As dyspnoea increases the patient tries repeatedly to get out of the bed in vain and thus becomes exhausted, and finally lies quiet. At this stage there is response to painful stimuli only. Eventually coma sets in, which may last for two to twelve hours before death.

In cases that recover, even though eventual recovery is apparent, the patients are observed to be very weak for long periods. Tremors and exhaustion are seen in convalescent patients even on slightest exertion.

In two fatal cases, a foul odour of that of a putrefied egg was observed in the patient prior to death.

In addition to initial complaint of headache, fever, pains in the low back and extremities and severe prostration, 5 patients had haemorrhagic signs such as bleeding gums, epistaxis, haemoptysis, haematemesis, melaena and red blood in the stool. Six patients manifested gastrointestinal disturbances and four of them exhibited drowsiness, tremors and slurred speech. Fourteen had albuminuria.

Laboratory Findings

The initially low leucocyte count gradually returns to normal in cases that recover. The eosinophilic count rises as the fever subsides. Albumen and granular casts were found in the urine in a majority of the cases.

Three of the four cases which terminated fatally were subjected to autopsy.

Diagnosis

Thirty-four cases diagnosed as Kyasanur Forest Disease were observed. The diagnosis was confirmed in twenty-one by virus isolation and/or rise in titre of specific antibodies.

This infection should be suspected in a patient coming from the infected area, with the history of having visited forest where there is monkey mortality and manifesting the signs and symptoms mentioned. Isolation of virus and demonstration of antibodies in the serum of the patient by complement-fixation tests, haemagglutinin inhibition tests and neutralisation tests confirm the diagnosis.

Treatment

Treatment is symptomatic. Aspirin was given in these cases to relieve headache and body pains. Lumbar puncture was occasionally done. Fluids orally and parenterally were given to combat toxaemia and dehydration. I.V. plasma and whole blood transfusion with vitamins K and C were indicated in cases of haemorrhagic complications. Multi-vitamins and proteins were given to recoup the patient from the devastating effects.

Discussion

Essentially Kyasanur Forest Disease is a febrile disease with a haemorrhagic tendency. The incubation period has been determined as 3 to 9 days (Work *et al*, 1957). Chills, headache and fever are possibly toxaemic manifestations of the disease. Suffusion of the conjunctivae and palate and lymphadenopathy point to the involvement of the lymphatic and vascular system. Thrombocytopenia and leucopenia possibly indicate suppression of the haemopoietic tissue resulting in haemorrhagic tendency. Rales and crepitations heard during the last few hours in fatal cases are primarily due to haemorrhage into the alveoli. Dehydration and hepatic insufficiency seem to intensify the toxic picture. The liver seems to be severely and consistently involved in the pathogenesis of the disease. The fact that neuronal degenerative changes in the brain are similar to those seen in fatal cases of hepatic coma, possibly indicates that the coma is hepatic in origin. Examination of the nervous system has not shown any neurological signs, except the positive Kernig's sign, which may be due to rise in intracranial tension and due to splinting of the tender skeletal muscles. Albumen and granular casts in the urine reflect the tubular degeneration of the kidney. Death appears to result from involvement of the liver and haemorrhage into the lungs.

Marked prostration and dehydration may be due to involvement of suprarenal cortex, which remains to be studied. Histological studies of stomach, intestines and pancreas and their blood vessels may throw additional light on the gastrointestinal manifestations. Biochemistry of blood and bone-marrow studies may further explain the haemorrhagic complications.

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OBSERVATIONS ON THE PROPERTIES OF A PIPERIDINOMETHYLPYRAZOLONE DERIVATIVE

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The commonly used antispasmodics inspite of their having powerful spasmolytic activity, exert some undesirable side-effects and therefore can not be used for long periods. They generally act either by their neurotropic or by their musculotropic properties. Combination of both these properties in a single compound is usually not seen. Moreover, the natural antispasmodics such as, atropine, papavarine are toxic. In consideration of these drawbacks, attempts have been made to find out suitable antispasmodics from synthetic sources.

In this laboratory, a series of compounds were synthesized and detailed pharmacological studies were carried on a number of compounds (Bose and Bose, 1952). It was found that the compound 1-phenyl - 3-methyl - 4-piperidinomethylpyrazolone possesses a significant spasmolytic activity, which was both musculotropic and neurotropic in origin.

Considering the low toxicity, and the slow absorption of the compound which is likely to cause a higher local concentration in the gut, it was considered to be of interest to study this compound clinically on some patients suffering from spasmodic condition of the gastro-intestinal tract.

METHOD AND MATERIALS

All the materials recorded herein, were obtained from the patients admitted in the B. I. Therapeutic Ward, R. G. Kar Medical College, Calcutta. Gastric analysis was done in each patient before and after treatment by fractional method, where the free hydrochloric acid was estimated by titrating with N/10 NaOH using Topfer's reagent as an indicator ; and total acidity estimated by using phenolphthalein as indicator. The anticholinergic activity of the compound was studied by noting the effect of the compound mixed with gruel on gastric acidity and comparing it with that of atropine injected intramuscularly

TABLE I—SHOWING EFFECT OF ASC-I ON SPASMODIC CONDITIONS OF THE GASTRO-INTESTINAL TRACT

Nature of case	No. of cases	Symptoms	Dosage	Result
Peptic ulcer	8	Pain in the epigastrium and hyperacidity	0·25 g. thrice daily	Pain was relieved in 3 cases
Colitis	2	Intermittent pain in the abdomen	0·25 g *stat*; repeated after 1 hour; then t.d.s.	Pain in one case was relieved immediately, that in another was relieved after 2 days
Chronic intestinal obstruction due to tuberculous peritonitis.	1	Pain in the abdomen	0·25 g. 4 times daily	The intermittent pain used to be relieved so long as he was taking the drug
Acute cholecystitis ...	2	,,	0·25 g. t.d.s.	No relief
Hiccough due to pneumonia	1		0·25 g. t.d.s.	No relief

at the time of feeding the gruel on another occasion. The antacid activity of the magnesium aluminium silicate alone was studied after feeding for 7 days with a dose of 0·5 g. thrice daily. All the patients after preliminary investigation were put on strict milk diet for 7 days in order to study the effect of the diet on the relief of symptoms. Only those cases, which were not relieved by diet alone, were selected for drug therapy.

The diagnosis of peptic ulcer was made by gastric analysis and confirmed by barium meal skiagraphy of the stomach and duodenum.

The period of treatment with the drug and its combination with magnesium aluminium silicate varied from 2-8 weeks.

Results

The compound (ASC-I) was studied alone in fourteen cases where the symptoms were attributed to certain spasmodic conditions.

It can be seen from Table 1 that the compound is effective only in spasm of the gastro-intestinal tract. Gallbladder spasm was not much relieved. There was considerable relief of pain in 3 of the peptic ulcer patients. Therefore, it was considered worthwhile to study in detail the effect of the drug on the gastric acidity and fasting content of peptic ulcer cases. The results are tabulated (Tables 2 and 3).

Table 2—Showing Effect of 0·25 g. ASC-I t.d.s. on Fasting Gastric Content

Case No.	Fasting content in c.c.	
	Before treatment	2 weeks after treatment
1	60	35
2	50	30
3	42	25
4	32	30
5	38	32
6	48	20
7	68	25
8	70	48

The fasting contents, particularly in cases showing a high level, were significantly brought down on treatment with the drug (Table 2). But the gastric hyperacidity, though lowered to some extent, was not remarkably so, when the drug was used alone (Table 3).

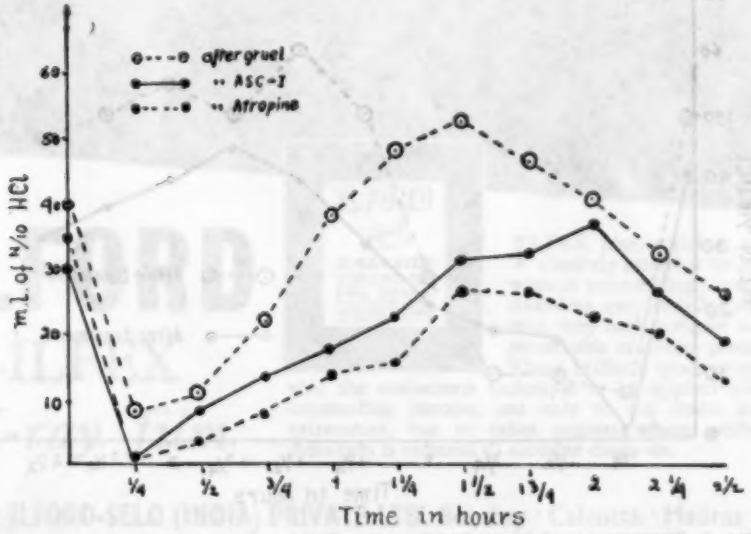

Fig. 1—Showing the Mean Curve on Gastric Acidity (5 Patients).

TABLE 3—SHOWING EFFECT OF ASC-I ON GASTRIC ACIDITY*

Sample	Before treatment		2 weeks after treatment	
	Average	Range	Average	Range
Fasting ...	53·6	42-65	43·2	30-60
15 minutes ...	9·3	5-15	7·7	0-15
30 ,, ...	22·8	15-35	21·4	12-28
45 ,, ...	28·2	20-38	25·1	15-35
60 ,, ...	35·1	30-42	30·9	25-40
75 ,, ...	40·8	32-45	40·2	30-45
90 ,, ...	50·2	45-55	40·7	35-43
105 ,, ...	54·8	45-60	44·3	40-51
120 ,, ...	50·7	40-55	44·4	40-50
135 ,, ...	40·2	30-43	35·7	30-40
150 ,, ...	35·5	30-41	30·7	25-35

* Gastric acidity expressed in terms of number of c.c. of N/10 NaOH required to neutralise 100 c.c. of gastric juice.

Considering that atropine causes a diminution of gastric secretion on account of its anticholinergic action, a comparative study of this compound with atropine was carried out by feeding or injecting the drug, as the case might be, to peptic ulcer cases, at intervals of one week. The average values from 5 cases are plotted graphically in Fig. 1.

It can be seen (Fig. 1) that the compound (ASC-I) exerts a definite anticholinergic activity though not so strong as that of atropine. But atropine as a neurotropic antispasmodic and anticholinergic agent has various drawbacks and side-effects. ASC-I is free from such untoward reactions. Therefore, these properties of the compound were taken advantage of in order to evolve a suitable antispasmodic *cum* antacid combination. A combination was obtained in tablet form, containing 0·25 g. of ASC-I and 0·5 g. of magnesium aluminium silicate. A preliminary trial of the same dose of magnesium aluminium silicate was given in a few cases to see the antacid activity of the compound alone. It was found that under the chosen dosage, it did not exert significant acid-neutralising properties (Fig. 2).

Table 4 summarises the results of treatment of 15 cases with this combination. The data from a typical case is presented in Fig. 3, and the effect on gastric acidity after treatment is plotted in Fig. 4.

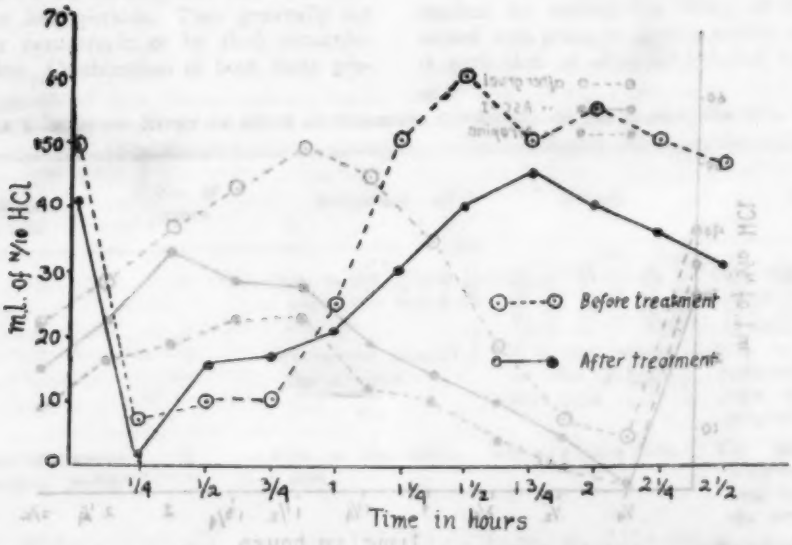

FIG. 2—SHOWING THE GASTRIC ACIDITY AFTER TREATMENT WITH MAGNESIUM ALUMINIUM SILICATE.

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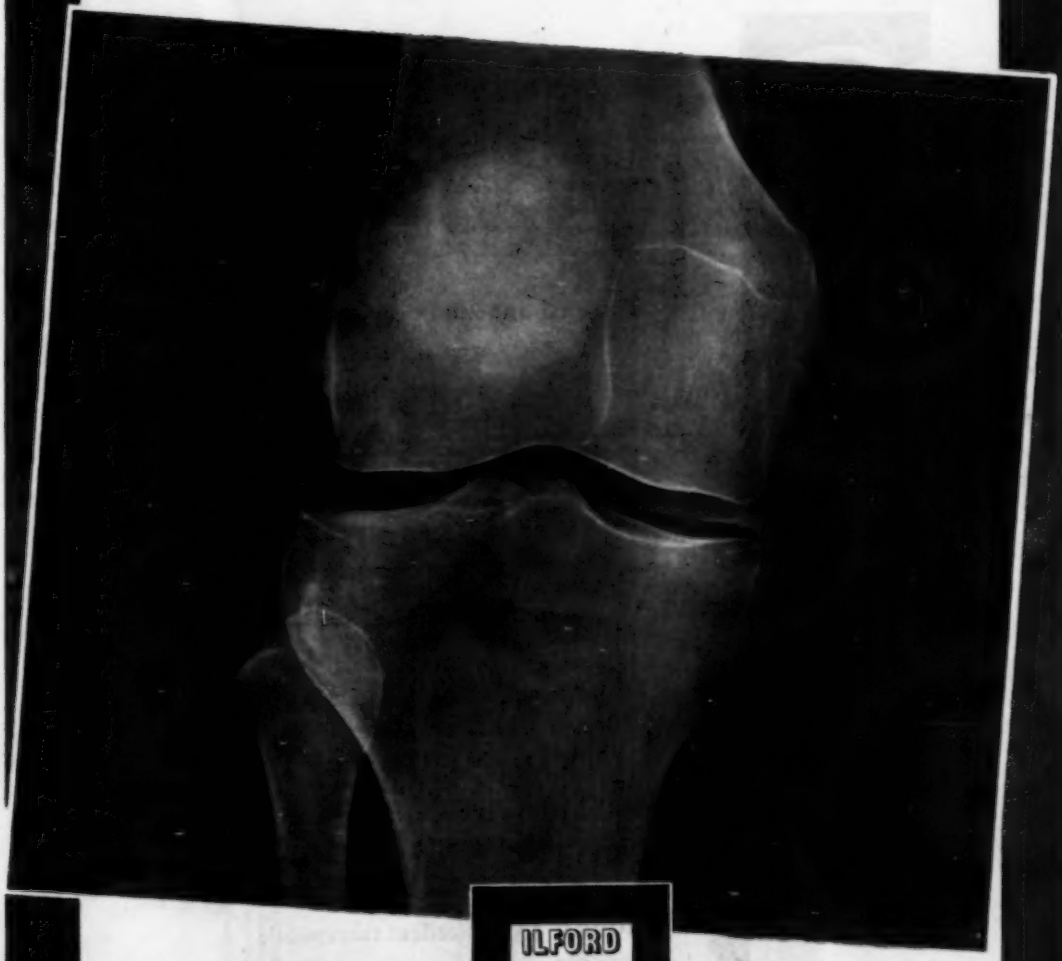

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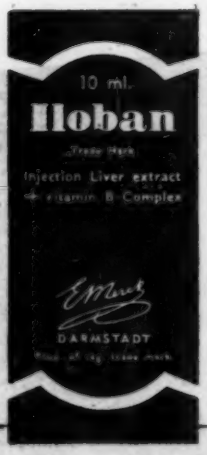

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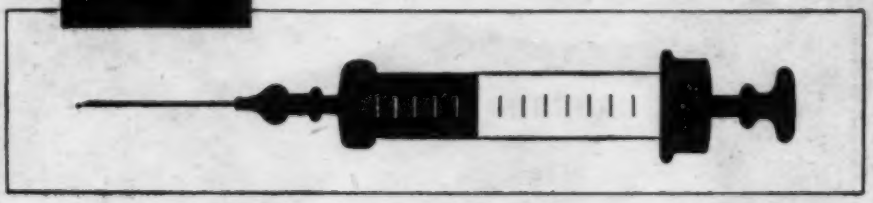

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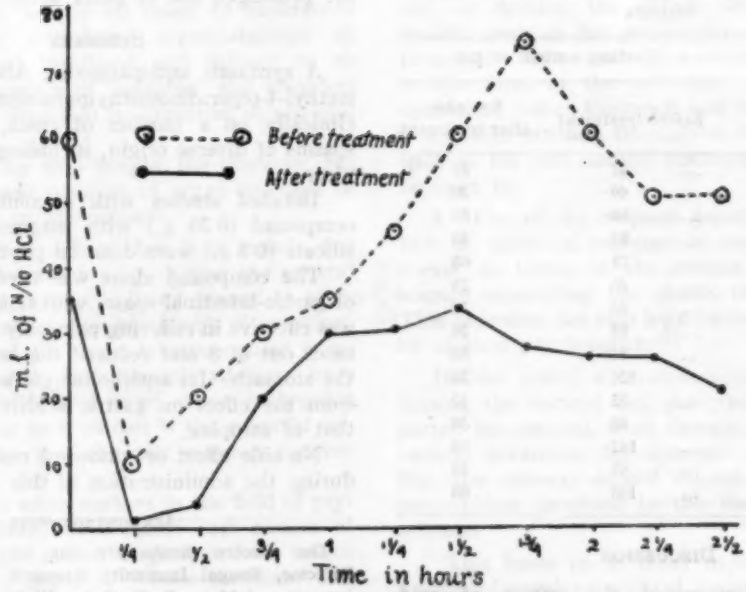

FIG. 3—SHOWING THE GASTRIC ACIDITY BEFORE AND AFTER TREATMENT FOR SIX WEEKS IN A TYPICAL CASE.

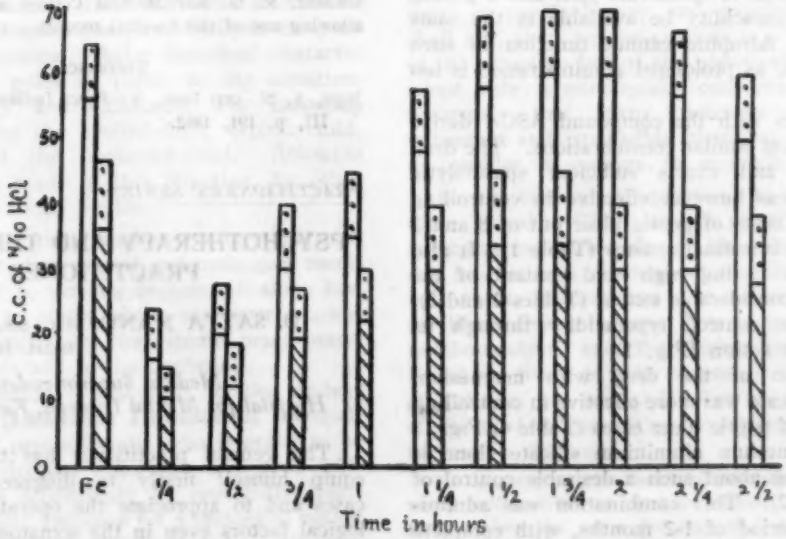

FIG. 4—SHOWING THE MEAN GASTRIC ACIDITY OF 18 CASES AFTER TREATMENT FOR 6 WEEKS WITH THE COMBINATION. THE SPOTTED AREA SHOWS THE AMOUNT OF COMBINED ACIDITY.

TABLE 4—SHOWING THE EFFECT OF TREATMENT WITH THE COMBINATION OF ASC-I AND MAGNESIUM ALUMINIUM SILICATE

Case No.	Fasting content in c.c.	
	Before treatment	6 weeks after treatment
1	42	32
2	40	30
3	80	50
4	65	40
5	75	65
6	35	25
7	32	26
8	65	26
9	86	50
10	120	30
11	55	32
12	68	30
13	142	50
14	45	40
15	140	60

DISCUSSION

The neutralisation of the excess of acid secreted by the gastric mucosa by suitable diet and antacid, and the relief of the pylorospasm by antispasmodics, constitute the present day routine medical treatment of peptic ulcer.

The alkalies and aluminium salts have no inherent antispasmodic action. It would be highly desirable if relief of spasmodic pain and a graded control of hyperacidity be available in the same combination. Atropine cannot function in such a combination, as prolonged administration is not feasible.

The studies with the compound ASC-I derive importance from similar considerations. The drug is non-toxic and exerts sufficient spasmolytic activity. It was however effective in controlling the pain in 3 cases of peptic ulcer out of 8 and 3 other cases of intestinal spasms (Table 1). It also controlled the fasting high acid content of the stomach to a considerable extent (Tables 2 and 3), and helped to control hyperacidity through its anticholinergic action (Fig. 1).

Combination of the drug with magnesium aluminium silicate was more effective in controlling hyperacidity of peptic ulcer cases (Table 4, Figs. 3 and 4). Magnesium aluminium silicate alone is unable to bring about such a desirable control of acidity (Fig. 2). This combination was administered for a period of 1-2 months, with complete symptomatic relief, improved health, and freedom from any undesirable side-effects. It is probable that peptic activity of gastric secretion was not hampered by this combination, as is likely with the prolonged use of other antacids.

SUMMARY

A synthetic antispasmodic, ASC-I (1-phenyl-3-methyl-4-piperidinomethylpyrazolone, was studied clinically on a number of cases, suffering from spasms of diverse origin, including those of peptic ulcer.

Detailed studies with a combination of this compound (0·25 g.) with magnesium aluminium silicate (0·5 g.) were done on peptic ulcer cases.

The compound alone was tried in three cases of gastro-intestinal spasm with relief of spasms. It was effective in relieving pain only in 3 peptic ulcer cases out of 8 and reduced the fasting content of the stomach. Its anticholinergic activity, as noted from the effect on gastric acidity, was less than that of atropine.

No side effect or untoward reaction was noted during the administration of this combination.

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PRACTITIONERS' SERIES

PSYCHOTHERAPY AND THE GENERAL PRACTITIONER

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The general practitioner has to prepare and equip himself firstly to diagnose psychogenic cases and to appreciate the operation of psychological factors even in the somatogenic cases and secondly to treat them.

1. It is easy for the general practitioner to understand in general that the child is the father

of man. But it becomes very difficult, in practice in a given case, and in all cases, to understand the underlying disordered organ-language or body-language of childhood and infancy in its causation of disorders of 'meaning' and disorders of attitudes and finally in its causation of physical complaints.

After obtaining this insight the therapist has to correct the basic disorder of organ-language in the remote past in his patients.

The situation is difficult but it is mainly due to a defective presentation by us that the general practitioner feels that he is being coaxed to practise as difficult and mysterious a task as exorcism.

To understand the organ-language there is no dictionary available, even though attempts have been made. The existence of active pathogenic neurotic trends in each patient is the essential criterion of the fact that the case requires psychotherapy.

It is said that some workers in the field of psychosomatic medicine have stated that nausea of psychogenic origin means disgust, asthma means a repressed cry, headache means boredom, and repressed weeping and mourning appears as eczema. These examples can be multiplied at length. No one seriously believes in this attempt at translation of the organ-language to popular language and *vice versa*.

Although on quite a different plane, yet Freud also described anal, oral, urethral, phallic, clitoral and genital character traits and other traits associated with castration complex, Oedipus complex and Electra complex. Adler described character traits relating, point to point, to the situation-sets of infancy and childhood. For example, special traits for the spoiled-child, orphan-child, only-child, and the neglected-child. Attempts have also been made in this direction, by other workers from various angles.

It is generally recognised now-a-days that personality is multi-dimensional and undergoes modification, though to varying degrees, all along life. Such surmises as stated above moreover are not profitably applicable, by the general practitioner, and are likely to add to the confusion.

2. The question of self-study by the student or the general practitioner I consider is essential. The student of psychotherapy who is going to be a specialist undergoes self-study and even self-education quite unwittingly by repeatedly treating patients under guidance for a prolonged period but this is not available to the general practitioner.

3. The therapist has to establish that there is a conflict, that it is pathogenic in the patient and then to enable the patient to see it, to find a satisfactory solution for some of his internal conflicts and to develop the extent and power of his healthy part on his personality. The therapist's personality has to undergo a corresponding change, in the form of the self-experiences of psychodynamics, better tolerance and the attainment of a scientific attitude throughout the procedure inspite of his own natural reactions to the material brought up.

4. One of the frequent questions raised is the lack of statistical evidence or any evidence whatsoever in terms of the criteria of the medical science supporting the claims of psychotherapy. This objection has also been raised amongst others by clinical psychologists.

Dalbiez (1941) a trained eminent logician criticising the method and doctrines of Freud supported his method, even though he criticised the various doctrines, for example, infantile sexuality, the one-way censor mechanism and anthropomorphism involved in the doctrines. He has affirmed

"This leads us to insist upon a fundamental quality of psycho-analytical investigation which is a stumbling block to many people. Analysis explains the individual present by the individual past. If we adhere to the word, Science which limits this term to the explanation of the particular by the general, of the event by the law, in the contra-distinction to history, which is the explanation of the event by an antecedent event (as done in psychotherapy and psycho-analysis) we shall say, that, psycho-analysis is a discipline not of the scientific but of the historical type. If we adopt this terminological convention, we must recognise, that many sciences contain an important and irreducible historical element. Let us consider, in geology, for example. . . . ."

5. A teleological question, to what end, is often raised. The general practitioner has a commonsense philosophy of his own by this time and has his own views about the problem of free-will *versus* determinism and about the purpose of life. Psychotherapy being associated with psycho-analysis and that being associated with Freud are likely to raise resistances and a number of defences get involved. But an understanding of the modern conception of psychotherapy helps to resolve this conflict.

Mr. A., a young professor of psychology, was undergoing self-analysis as student analysis for about one year. When he came for one of his usual psychoanalytic interviews, which he underwent after every 3 or 4 months to keep his self-analysis proceeding successfully, he complained of urticaria which had persisted inspite of usual medical treatment by a skin specialist.

One of the dreams that he could not interpret totally was: "I am in a room and there are 'two American army officers' who have come to visit me and my 'wife' for the first time (we had met a day before in a party). I have gone out of the room. When I came back I saw my wife in a 'compromising position' with both of them. I am 'shocked' to notice it. (For days I could not get over this scene of nude and obscene nature. It was so unbelievable. I had never doubted her. The idea that it was a dream, could not help me much. I could not objectively interpret it)".

On further questioning it was found that the attack of urticaria had begun at that time.

The total interpretation of the dream proceeded in the following main stages and the symptoms disappeared during the process which took about a month.

"I (am in Calcutta stationed there during active service for some months. I have been working on my new thesis in my spare time) see my wife (I am very fond of her. She has appeared in my dreams before. I think she is a model of purity and chastity. I have never observed any moral defalcation in her. I have often told myself, 'I wish I could be like her' in this respect) with the Americans (their wealth and so-called dollar-worship represent monetary ambitions). I think it means that I am very fond of my thesis and it is my soul's ambition ; it is as precious to me as my life and my wife). (I thought during the war service I shall be able to make some money as well as work on this thesis as it was also concerned with psychology of war, but I am afraid in the lure of monetary gains, I have allowed my ideals (my wife) to fall into a trap. I should have known better and taken care of this earlier)."

The physical symptom began to subside after this interpretation which he had already arrived at tentatively, but the confirmation of re-analysis by a specialist helped to resolve the conflict further. This partial dream-interpretation was based on reminiscences of 'wife', 'Americans' 'compromising position' and 'shocked' as dream-elements.

The same dream-elements, have further and deeper meanings, 'Wife' also meant to him motherlikeness and she again was like Parbati and this was his ideal woman—his *anima* (Jung's terminology)—his soul.

The Americans represented (to Mr. A., who was an Indian Christian) the Protestants and Catholic Christians. He was lately working with his thesis about religious ideologies and was considering how the two basic trinity conceptions were related. In this period he was attempting, to correlate the Hindu trinity model of Shiva into the Christian trinity; the *tri-shule* into the cross. He felt in the dream he had succeeded by seeing one in the lap of the other. His thesis (wife-equivalent) in the lap of Christianity. His seeing them naked meant he had fully known the reality about the thesis. But his defence systems nurtured from childhood in a Christian home revolted at even this flirtation of two religious doctrines. In the dream he was nearer the truth but when awake he was again governed by pride and prejudice, and could not accept that the two religions were so identified or so related.

Dream interpretation is a very important field which demonstrates the inter-conversions and transactions of organ-language into popular word language and *vice versa*. In symptom-formation a similar mechanism is at work. In therapy and in interpretation the abnormal attitudes developed at the organ-language stage have to be worked through in gestures and verbal behaviour, as stated above.

During the total interpretation of the dream he had studied that all these dream-elements were acting within him as independent dynamic units. Various dream-elements have to be reminisced upon again and again. They integrate in various patterns at different occasions to form various patterns of dream-meaning for the day mentation. He had grasped many meanings of this dream. The other important feature is the process of dream interpretation that is set up in us naturally and which has to be encouraged. The natural process goes on soon after the dream during the short wakeful period which follows. It helps us to integrate dream-elements in various rare combinations and permutations, so that we begin to know more about ourselves.

This is the essential principle of scientific dream-interpretation (Nand, 1946). I recommend that the subject be taught the use of Thematic Apperception Test (T.A.T.) cards. After this he may be given the various dream-figures selected as in the sample dream one by one in their dream-context and he may be asked to form stories around them as he did with T.A.T. cards.

This I find is a rough and ready method of collecting reminiscences on various figures.

He began to understand that this process of differentiation and integration (analysis and synthesis) goes on within him in the dream process as well as in the day. His hypotheses about the nature of the world as a whole and about the objects as units in it as well as his attitudes to other persons and to these objects are a dynamic growth and an adaptative process, by the process of verbalising his inner wishes and fears to various situation-sets. The wishes and fears, aggressions and reparations evolve from being directed to instinctual aims or organ-functions (erotogenic zones) in infancy to being sublimated to higher ideals.

The horizons of the personality enlarge and the previous hypotheses interpersonal relationships and attitudes which were not correct or which were not socially acceptable are modified and correlated to the commonly accepted patterns of hypotheses and ideals. This is the essence of

the process of growth of intelligence sublimation and individuation at various life-periods.

A person by voluntarily and endogenously accepting and practising the 'right' and the 'good' (Klein, 1952) attains independence from dependence (Winnicot, 1953). His internalised world created by the above-mentioned processes in him becomes more and more exact replica of the external world, and there is thus a free transaction between them. If this independence is not developed the individual self remains at the level of compromise and needs props from society, called neurotic needs by Horney (1941). They long for and need a significant person who tells them what is 'right' or 'good' in each incident. This person has also to cajole them to act correctly. Adler has studied in details the life-lies and compromises in the life of a neurotic by which he dodges the issues to save 'face'. Freudian ego-psychology talks of ego-defences, and resistances when psychotherapy is attempted, due to repressions and splits, in the personality.

He had come to me with the realization that this urticaria was of psychological origin. He had realized this because of previous self-study and of the understanding of the exact body-mind relationship (libidinous as well as somatic functions of each organ and body part).

If the general practitioner as therapist during his self-study wants to understand the body-mind relationship, in action, interpretation of his dreams is a very useful method to demonstrate and to convince him.

6. Psychotherapy may use supportive methods. Suggestion and reconditioning are also employed ; semantic approach and didactic methods, may also be used.

A specialist may attempt to give the patient an insight in the genesis and dynamics of his symptom or disordered meanings (including defective hypotheses and deformed attitudes). He may attempt not only to re-educate and interpret but may go on to re-construct the personality.

The attainment of a relationship conducive to therapy is an important skill and is an art, but can be easily acquired by a doctor.

To carry out symptomatic treatment is easy. Suggestion hypnosis or abreaction with suggestion and the use of drugs are often successful.

The general practitioner can always obtain a report from a specialist which will guide him in diagnosis, prognosis and treatment at its various stages.

The removal of stress and strain is the concern of the therapist in that he can suggest the various specific forms of assistance required, to those in authority who may be the relatives or may be the community.

7. The correction of existing abnormal attitudes and disordered meaning, I consider is the work of a specialist if the attempt by inadequately trained psycho-therapists to deal with this sphere makes evaluation of psychotherapy as a whole a difficult problem.

Once neurotic patterns attain secondary elaboration and secondary gains either the basic abnormality may be treated only by a specialist or this may be left alone after removal or amelioration of symptoms and the general practitioner may resort straightaway to the further development of the healthy areas or to what I think may be called sublimative or morale therapy including re-education and reconstruction with varying degree of insight as to the working of the still healthy parts though yet under-developed, or precociously nebulous.

8. When psychotherapy is presented in terms of the modern schools of psychotherapy, the terminology is so limited and partisan that the general practitioner finds his experiences uninterpretable in it.

Thus we exclude the potential therapeutic agency of his personal experiences, thoughts and working through processes from coming into action when he sets out to treat patients.

Certain modifications have been introduced and these have to be accepted and used.

How do I get over my mental conflicts and inner tensions? What is the basis of my sense of security? Why do I get up every day from sleep with an optimistic, open-minded attitude to carry on the adventure of living? How do I bear my stress and strain? How have I learnt to give and take? How do I face frustrations and why?

But one cannot thrust his views or his experiences on others. This is one of the modifications that the modern psychotherapist has to learn, due to changed social character (Fromm, 1950) and due to other factors operating in modern times. What is my medicine may be another man's poison.

The exact configuration of the personality of the subject along with his specific life-history has to be assessed and the exact problem specific to him at that time has to be located and he has merely to be guided in a more or less leaderless and in some case 'client-centred' situations.

9. The general practitioner has to carry on self-study and has to locate the stages as well as

the possible pitfalls of his own sublimation to practise this form of therapy. Then he will be able to form a therapeutic entity with his patient, individually and in confidential interviews. If the patient can be induced to have one good friend, say in the therapist, the rest of the therapeutic process will follow easily.

Abreaction is advised. It can best be carried out by injecting slowly sodium amytal gr. 3¼ and methedrine 30 mg. in 10 c.c. of redistilled water, intravenously. This can be repeated once or twice a week. There are no ill-effects.

In the abreacted material he will find self-pity, self-love and persecutions, false prides and baseless prejudices. He will also find ambivalence and misdirected aggression as well as unnecessary or ineffective reparations. Complexes of various brands, nebulous psychopathic trends, minor or episodal perversions and false judgments. The para-reactions, usually, in the form of pride and prejudice as well as incoordination of hate (aggressions) and love (reparations), abnormal wishes and fears, which had been retained and were developing in the individual as well as were short-circuiting his energies in complexes, under stress and strain begin to become more significant and produce symptoms of over-strain and breakdown. In some cases the basic abnormality is not limited to pride and prejudice but goes further into disordered meaning and interpretation of environment as well as disordered attitudes of the self in the form of false judgments or unsatisfied perversions and disguised psychopathy.

The stress and strain may be acute or long-lasting and of low grade type. The patient has been taken unawares and has been surprised or his defences have not been strong enough, his peace with and faith in others and in himself was not strong enough, his capacity for empathy and charity were not fully developed. His morale has failed, or his tension-relieving systems by repeated strain have broken down and become somatically pathogenic. The tensions between the conscious and unconscious are so great that the unconscious is breaking through. The conscious (the good) which conforms to the code of society (*samaj*) acts as a censor mechanism and represses the unconscious which learns to express its tensions by what are really cheating mechanisms but are given sophisticated names, like tact, diplomacy, man-management, and propaganda.

In some persons with perfectionist attitudes the unconscious often escapes as an untamed and unskilful impulsive behaviour the repression, in various ways, sometimes as pathogenic and at others as antisocial or as para-reactions, for example, the night life of large towns. De-repression does ameliorate somatogenic symptom-formation at a certain stage and to some extent but this is not a psychotherapeutic measure.

10. The general practitioner has to learn to record the history of the patient as detailed as if a biography is being written. He has to collect the material from as many sources and of as much vital importance with personal details. Even this may not be enough. Reports from specialists will always help.

Most of the reminiscences about the significant persons, emotive experiences and mind-elements are to be discovered, along with the life-history of each of them as they evolved from infancy in terms of organ-language to verbalised meaning and attitudes.

If a psycho-analytic school or an individual therapist goes wrong or misses the therapeutic critical point, it is because, other factors being equal, he has missed some connecting link or some personal detail and instead of working in small detailed personal spheres he has been forced to work with too large a field or at the non-specific level of experience, at the time.

It used to be a difficult task to make the drug-minded medical student recognise the utility of what is locally called, 'treatment with words'.

Therefore psychotherapy is the only approach to the re-education and reformation of attitudes and responses and for the re-interpretation and re-integration of experiences, past and present, into socially-acceptable meaning.

The fixated, backward and un-developed functions have to be made to attain maturity and the nebulously precocious spheres have to work through reality-testing and reality-acceptance to consolidate into one dynamic purpose in life.

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NEW VIRUS DISEASE—KYASANUR FOREST DISEASE*

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Kyasanur Forest Disease, a new arthropod-borne virus infection of man and wild monkeys, has been discovered in villages of Sorab and Sagar Taluks of Shimoga District, in Mysore State. The disease is named after the locality from where the virus was first isolated from monkeys and later from human patients (Work and Trapido, 1957).

The area from where human cases were reported is approximately 200 sq. miles, rectangular in shape—Sagar, Sorab, Shiralkoppa and Thyagarthi forming the extreme limits of extension. Ulavi is 10 miles from Sagar on the road north to Sorab. Most of the infected villages are concentrated on either side of Ulavi-Shiralkoppa road. The epizootic area where dead monkeys have been found is approximately 600 sq. miles.

The villages are situated amidst forest of varying type. Towards the west where the rainfall is heavy, it is ever-green and eastwards it is deciduous with shrubby jungle. The rainfall varies from 35″ to 80″ per annum depending on the region. The altitude is approximately 1,800 to 2,000 ft. above sea level. The Varada river with its tributaries traverses the area. There are a number of small tanks meant mainly for holding the water table high and not for irrigation purposes. The road-side villages are connected by metalled roads while the interior ones have bullock-cart tracks and foot paths across the forest. But for a few road-side villages which are connected by bus, access to most of the villages must be either by cart, or on foot.

The occupation of the people is mainly agriculture and they have intimate contact with the forest adjacent to the villages. The main crops are paddy, areca-nut, plantains, and sugarcane. The socio-economic condition is generally poor and the majority of people live in huts built with mud and thatched roofing.

Report of Fever Cases of Unknown Origin During February—April 1956

On 25th February 1956, reports of 4 attacks with 2 deaths due to fever in Kannur village were received. The village is situated 5 miles from Ulavi in the midst of forest, having 12 houses and a population of 73.

Immediately conducted investigation revealed that the patients in general had continuous fever with gastro-intestinal manifestations, headache, body pains and in a few cases haematemesis and melaena. During the investigation the villagers remarked that wild monkeys were dying in large numbers in the forest adjoining the villages. This association between deaths among monkeys and human cases attracted the attention of the health staff and the local people. The usual laboratory examinations, like blood smear examination for malaria parasites and Widal and Weil-Felix reactions for typhoid fever and typhus infection respectively and culture of stools samples for Salmonella and Shigella were negative.

In the absence of definite knowledge regarding the nature of the infection, routine preventive and curative measures were undertaken on the possibility of the disease being due to some unknown gastro-intestinal infection. Chlorination of water sources and immunisation of the people with T.A.B. inoculations were done as preventive measures. Patients were treated with chloramphenicol and sulphonamides (Seshagiri Rao, 1957).

By 2nd April 1956 the total attacks reported from Kannur rose to 19 of which six terminated fatally. Similar attacks of febrile illness were reported from the 5 neighbouring villages, which are situated within an area of about 8 sq. miles.

The disease in human beings and monkeys subsided by the end of April, 1956.

Reappearance of the Epidemic of Fever Cases in 1957

After a quiescent period of 8 months, a monkey death (Langur—black-faced) was reported on 21st January 1957 from Thalebylu, which is 2 miles from Kannur, the previous site of infection. An autopsy of this monkey revealed no positive findings.

In course of time, febrile cases were reported from the villages of Thalebylu, Hunavalli, Hosur and Kannur, all of them situated within a 2 mile radius.

On 15th March 1957, a diseased (white-faced) monkey was caught, in the outskirts of Shigga village and the same was sent in a live state with a courier to the Public Health Institute, Bangalore, for observation and conducting further investigation. 15 samples of blood from patients and 1 blood sample from the above sick monkey were also sent for pathological report.

The monkey died on 18th March 1957 and an

* Read at the 34th All-India Medical Conference, Bangalore, December 1957.

autopsy was conducted but no positive findings were obtained. However a portion of the brain which was preserved in glycerine at −20°C was inoculated intracerebrally into mice. All the inoculated mice came down with illness after 5 days and died the next day. The harvested brain material from these mice, which was found to be sterile, was inoculated intracerebrally to infant mice again. These also came down with illness after an incubation period of 3 days. Histological sections from the autopsied monkey sent to Neuropathology Unit, Bombay, revealed a picture of a focal, non-suppurative and acute encephalitis.

In the course of one week another 72 samples of blood were obtained from patients who were having continuous fever of more than one week and the same were sent to the Public Health Institute, Bangalore, for Widal and Weil-Felix tests to rule out the possibility of typhoid fever and typhus infection. Blood smears were also taken from patients who had fever and chills. Blood samples from patients in the first week of fever were also taken for culture of organisms.

Since the spread of the disease was alarming, without waiting for the results of the laboratory examinations, immediate preventive measures were taken up in the form of mass T.A.B. inoculations, chlorination of wells and spraying of the houses and cattle-sheds with dieldrin. Treatment of patients was instituted by the administration of chloramphenicol. Soon it was observed that fresh cases began to appear among the people including those who had received the T.A.B. inoculations ; and treatment with chloramphenicol yielded doubtful results. On 30th March 1957, the report from the Bacteriologist, Bangalore, showed that out of 87 blood samples, only a single case was positive for Widal test. A fresh dead monkey from the forest adjoining Barige village (Kyasanur Forest) was brought on 27-3-57 and an autopsy was immediately conducted and blood from the heart and the required viscera were taken in glycerine on wet ice, for virus isolation. From 28th March 1957 to 4th April 1957, three more autopsies on dead monkeys were conducted and blood samples from patients, convalescents, and contacts in the infected villages were obtained and sent to Poona. The results of tests conducted in the VRC, Poona, revealed that virus was isolated from autopsy material of 3 monkeys and a similar or identical virus was isolated from the blood of 2 acute febrile patients belonging to Shigga village. Further serological tests indicated that the disease that was prevailing in the people was due to a virus belonging to group 'B' arthropod-borne viruses (Work *et al*, 1957).

The VRC field team started entomological studies in the infected area from 15th April 1957. It is reported that the virus of Kyasanur Forest Disease was isolated from pools of larval and nymphal ticks taken in Kyasanur Forest on the first and third days of collection. There have been isolations of the virus from the ticks collected in the forest adjoining Kannur and Hosur villages also. All isolations were from the ticks of the genus *Haemaphysalis*. A live trapping programme for small rodents in the forest was begun in June 1957 and the preliminary reports indicated that antibodies were demonstrated in shrews, field rats and three striped palm squirrels.

A Note on the Epidemiology of Kyasanur Forest Disease

From the analysis of the data collected it is observed that the epizootic in monkeys precedes the epidemic in human beings. The epizootic area is more extensive than the epidemic area. The epidemic starts in January about three months after the stopping of rains, when the villagers start going into the forest. It reaches the peak in the months of March, April and May and declines as the rainy season commences again when people stop going into the forest. To what extent this movement of the people is responsible for this seasonal incidence is still not known. The disease affects all those persons who visit the forest area irrespective of their sex and age. Most of the patients usually give a history of having gone into an infected forest wherein there was a monkey death. The available information, at present, leads one to conclude that Kyasanur Forest Disease is a new clinical entity with many factors in its epidemiology yet to be investigated.

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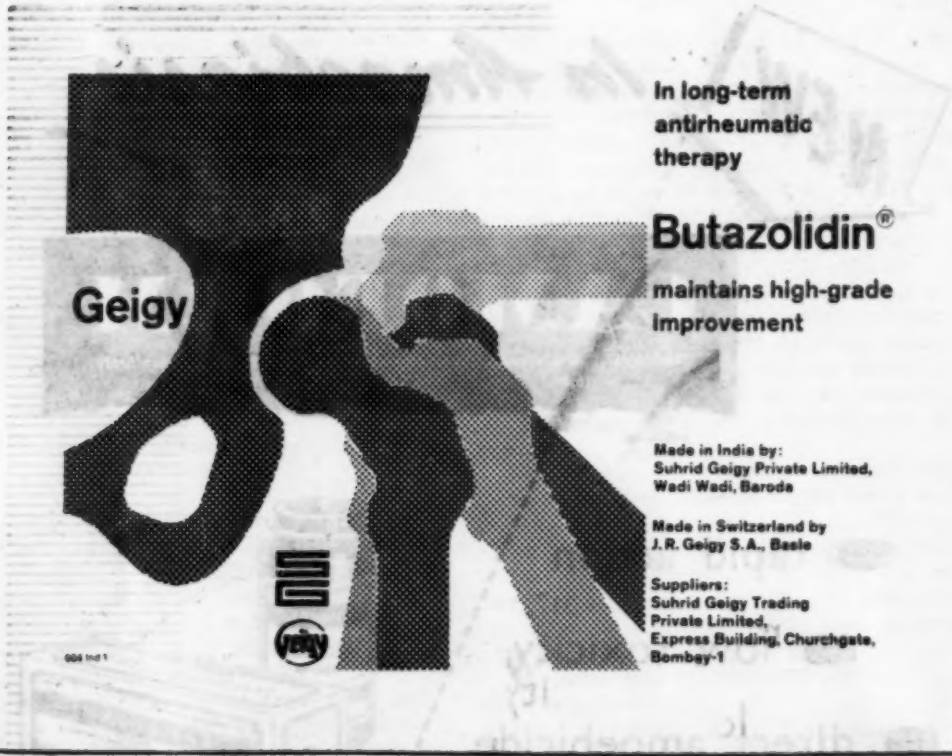
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COLPOSCOPY IN A FAMILY PLANNING CLINIC

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Bombay

A thorough periodic gynaecological examination is of great importance in advising birth control measures. It enables detection of asymptomatic cancer of the uterine cervix, and other pathological conditions of the pelvic organs and also detection of harmful effects, if any, from the prolonged use of contraceptives.

Changes during child-bearing years, from such influences as infections, lacerations, abnormal discharges or other causes of irritations may make a woman prone to develop growths of a malignant nature. The prolonged use of local contraceptives may also result in certain pathological conditions in the genitalia of the woman.

Nowadays, a gynaecological investigation includes colposcopy, exfoliative cytology and biopsy, in addition to history-taking and a routine pelvic examination. With these procedures, the chances of detecting early malignancy increase substantially.

Our own experience, in institutions abroad and in Bombay, confirms the effectiveness of these methods. They have proved their usefulness at our Clinic where, a few cases of early cervical cancer have been diagnosed during a routine gynaecological examination.

The purpose of this article is to emphasize the importance of colposcopy in the detection of early malignancy as well as minor changes occurring in the vaginal and cervical mucosa after continued use of contraceptives.

THE COLPOSCOPE AND ITS USE

Colposcopy in India has not received the attention it deserves. It has, however, been widely used in South America and Europe, particularly in Germany, France, Austria, Switzerland and Belgium. In these countries in most of the gynaecological clinics, colposcopy is an item of a routine pelvic examination.

Colposcopy consists of getting a stereoscopic viewing of the cervix, under magnification with direct lighting. It relies for its findings upon the fact that changes in the cellular architecture and in the vascular system can be detected by magnification of the surface epithelium.

The colposcope we use at the Contraceptive Testing Unit, is made by J. D. Moeller and is identical with the one used by Hinselmann who originally developed this method of instrumental examination. The cervix is visualised through an ordinary bivalve speculum with the patient in the lithotomy position and it is usual to commence colposcopic examination with a magnification of ten times.

The colposcope is further adjusted for the observations of the mucosa of the cervix as it is after the application of three per cent acetic acid for delineating the details with a change of magnification in the colposcope, and the use of colour filters, as might seem desirable and after application of aqueous iodine (Schiller test) to visualise areas free from glycogen.

The colposcope is once again adjusted and the vulva is inspected.

Fig. 1 illustrates the use of the colposcope.

COLPOSCOPIC FINDINGS

The observations are directed towards the findings of the characterisation of the epithelium and the vascular system. The first includes definition of the cell type (squamous or columnar epithelium), its thickness, the degree of keratosis and the type of the growth. The intensity of vascularisation and the direction and shape of the superficial vessels are recorded under the second series of observations.

BENIGN FINDINGS :

Normal cervix—When the ideal cervix is viewed under the colposcope the portio is intact, roseate and smooth. It is covered solely by squamous epithelium, and the vessels are very fine. Such epithelium stains brown on the application of aqueous iodine (Schiller test).

Ectopy—The columnar epithelium normally lines the endocervix but may be found beyond the external os. This is what Hinselmann (1955) terms "ektopia". By gross inspection it appears reddened, but colposcopy reveals it as being grape-like. It does not take the iodine stain.

The transformation zone consists of an intermingling of both squamous and columnar epithelium. This is the squamocolumnar junction from where the development of a cancer may

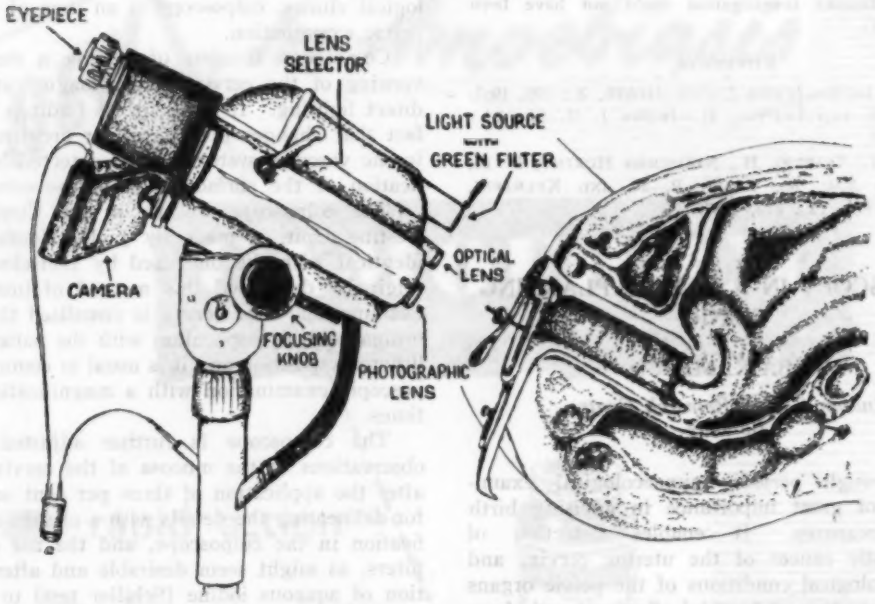

FIG. 1—DIAGRAM ILLUSTRATING THE USE OF THE COLPOSCOPE.

commence. According to Hinselmann (1955), 75 per cent of all cervices present a zone of this appearance.

By colposcopy one sees islands of columnar epithelium, gland openings in fields of squamous epithelium and dilated glands (Nabothian cysts). The zone represents a healing process, which clinicians may call 'erosion' or 'chronic cervicitis'. It stains poorly with iodine. On the average (90 per cent of the cases), the portio shows benign findings such as squamous epithelium, ectopy or a transformation zone.

Colposcopic examination of the cervical canal is not so easy. In multiparae the canal is funnel-shaped and only the lower half can be examined.

The normal vaginal epithelium has an appearance similar to that of the portio. With ageing, especially at the menopause the epithelium becomes thin, with the underlying vessels clearly demarcated and subepithelial bleeding seen, when it occurs.

Leucorrhoea—The colposcope helps to determine the type of vaginal secretion from the external os. "Ectopy" and the "transformation zone" with profusely secreting cervical epithelium, are easily recognised as the source of the leucorrhoea.

In a true cervicitis, i.e., inflammation in the region of the cervical canal, the secretion is cloudy. In a true endometritis particles of pus are suspended in clear cervical secretion.

Leucorrhoea due to *Trichomonas vaginalis* infestation is very frequent and characteristic. The discharge is foaming and greenish ; the mucosa is characterised by clusters or ovoids of tiny capillaries and petechial haemorrhages. These very circumscribed areas remain unstained with the iodine test.

ATYPICAL FINDINGS :

When the vascular system is altered and the epithelium becomes atypical, whether benign or malignant in nature, the colposcopic findings vary correspondingly. It is from these various changes, noted colposcopically, that carcinoma may be suspected.

The colposcopic findings of early cervical malignancy has been classified by Limburg (1956) into five groups: (1) leukoplakia ; (2) mosaic leukoplakia ; (3) ground leukoplakia ; (4) true erosion with loss of surface epithelium ; (5) abnormal transformation zones.

Leukoplakia—The term refers to a whitish patch, histologically the area being white because of cornification or parakeratosis.

Besides true leukoplakia, which is sometimes detected macroscopically, there are two specific forms of colposcopic leukoplakia which are discernible only by magnification namely the *mosaic form* and *ground leukoplakia*.

Mosaic leukoplakia sometimes called 'zoning' appears as an area of polygonal whitish-yellow fields bordered by red lines. The mosaic fields originate from blocks of keratinising epithelial cells, the red borders being histologically fine connective tissue septa, reaching high into the epithelium and carrying blood vessels.

There is a sharp differentiation in this type of leukoplakia and normal epithelium.

Ground leukoplakia—If the cornified layer of leukoplakia has been wiped off or if definite cornification is absent, the ground leukoplakia appears. It is characterised by reddish dots on a whitish-yellow field, the surface being depressed and having sharp border.

Each of these three varieties of leukoplakia remains unstained after the application of aqueous iodine. Finally, there is the *'abnormal' transformation zone*, where the small gland openings are surrounded by leukoplakia rings and the blood vessels are seen to be irregular, with corkscrew arrangements. The change in vessel growth (so-called adaptive hypertrophy) is extremely important as indicative of pre-invasive or invasive cancer.

If the biopsy is normal, we do nothing but follow the patient by colposcopy and cytology every two months.

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CASE NOTES

FAMILIAL LEPROSY

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It is generally agreed that children are more susceptible to leprous infection. Lara and Ignacio's observation (1956) on leprosy among children born in the Culion Leprosy Colony during the pre-sulphone and the sulphone periods showed that 20·9 per cent children of pre-sulphone days (1933-1940) and 19·9 per cent of the sulphone days (1947-1954) were suffering from leprosy, excluding the children isolated at birth. Incidence in children is thus pretty high and there is no appreciable difference in the gross incidence figure for contact-children during the two periods. Children constitute 7·5 per cent of the total number of leprosy patients attending the out-patient clinic of the School of Tropical Medicine. It is a sound policy to do everything possible to prevent children from coming into contact with the disease, but it is an error to think that susceptibility diminished with age in every individual. Brown (1956) observed that one-third of the patients in Southern Nigeria were under 15 years, and in Uganda 29 per cent were children.

To illustrate how leprosy spreads in a family the following case is reported.

CASE REPORT

B. S., a Hindu female child, 8 years old, was referred to the leprosy department of the School of Tropical Medicine on 28-9-56. She gave a history of development of a flat hypopigmented patch first appearing over the face. Later similar lesions gradually spread over the legs and back during the last five months. There were no subjective symptoms and no history relating to the family was obtainable at the time.

On examination it was found (Fig. 1) that the lesions were ill-defined, slightly hypopigmented,

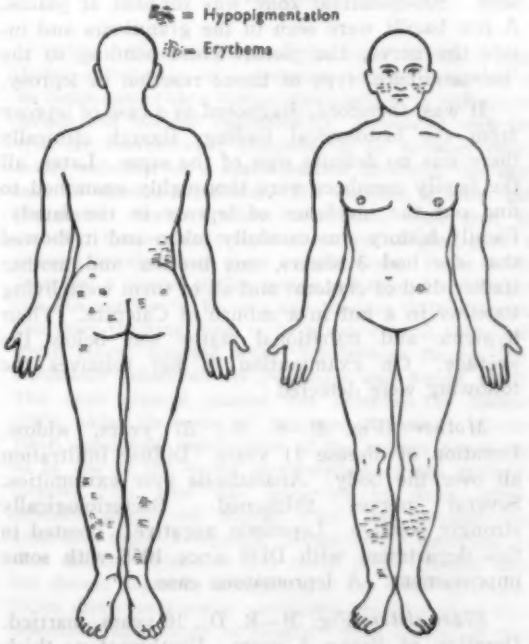

FIG. 1

dry and not scaly. Sensation over the patches to light touch, pain, cold and heat was not lost. There was no thickening of the nerves. The lesions were bacteriologically negative for acid-fast bacilli by ordinary routine slit and scrape method. The morphology of the individual lesions did not simulate any other skin disease but was very suspicious of leprous lesions, for which she was kept under observation and was advised to report after 3 months.

On 20-12-56, she was examined again when all the patches were found to have increased slightly in size. They were still hypopigmented without any superficial anaesthesia or analgesia, and smears from them were bacteriologically negative. As no definite diagnosis could still be made clinically and bacteriologically, a biopsy was taken from the lesions to find out the nature of histological changes. Early lepromin reaction with standardised refined antigen was negative. Histopathological examination of the skin lesions showed scanty to moderate infiltration, mostly around the blood vessels, skin appendages and nerves. The granuloma was not compact but rather loose. Dermal nerves were infiltrated to a slight extent.

Infiltrating cells were chiefly round cells and a few epithelioid cells. No tuberculoid arrangement or vacuolation of these cells was seen. Subepidermal zone was invaded at places. A few bacilli were seen in the granuloma and inside the nerve, the picture corresponding to the 'indeterminate' type of tissue reaction in leprosy.

It was, therefore, diagnosed as a case of leprosy from the histological finding, though clinically there was no definite sign of the same. Later, all the family members were thoroughly examined to find out the incidence of leprosy in the family. Family history was carefully taken and it showed that she had 3 sisters, one brother and mother (father died of cholera) and all of them were living together in a hut in a suburb of Calcutta. Their hygienic and nutritional status was below the average. On examination of her relatives the following were detected :

Mother (Fig. 2)—S. S., 37 years, widow. Duration of disease 11 years. Diffuse infiltration all over the body. Anaesthesia over extremities. Several nerves thickened. Bacteriologically strongly positive. Lepromin negative. Treated in this department with DDS since 1955 with some improvement. A lepromatous case.

Elder sister (Fig. 3)—R. D., 16 years, married. Duration of disease 5 years. Erythematous thick patch on face with anaesthesia and analgesia. No

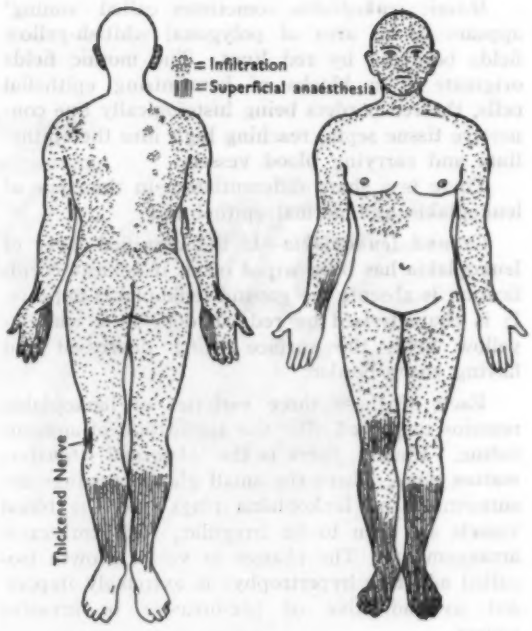

FIG. 2

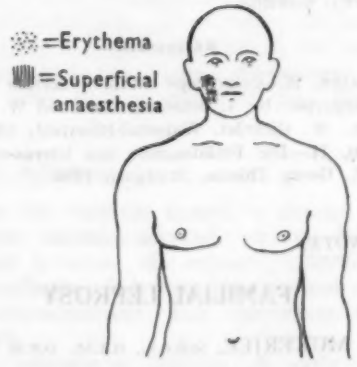

FIG. 3

thickened nerve. Bacteriologically negative. Lepromin positive. A tuberculoid case.

Next sister (Fig. 4)—G. S., 14 years. Duration of disease 4 years. Slightly erythematous and hypopigmented patches on the chin, body and extremities with sensory loss. Some patches were slightly thick. Left ulnar with its dorsal branch and left superficial radial nerve thickened. Bacteriologically negative. Lepromin strongly positive. Treated with DDS since 1955 with subsidence of the skin lesion. A tuberculoid case.

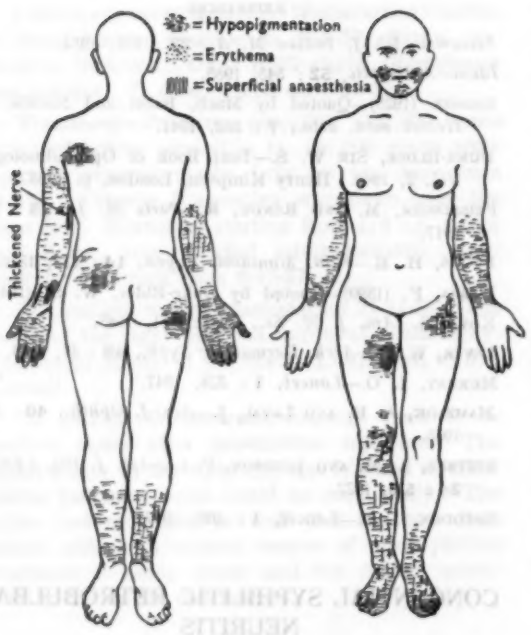

FIG. 4

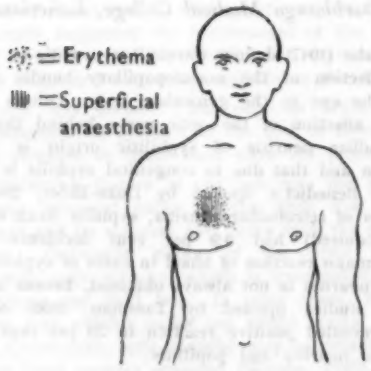

FIG. 5

Sister (Fig. 5)—K. S., 5 years. Duration of disease 2 years. Erythematous and thick lesion over chest with sensory disturbances. No thickened nerve. Bacteriologically negative. Lepromin strongly positive. A tuberculoid case.

Brother—N. S., 10 years. No lesions found. No sign of leprosy.

Discussion

This case is of considerable clinical importance, because all the three cardinal signs of leprosy, namely, loss of sensation, thickening of the nerve and presence of bacilli in smear were absent, and as such could not be diagnosed as a definite case of leprosy without the help of histopathological examination. It may be concluded therefore that though clinically one is unable to diagnose a case of leprosy in a suspicious case, histopathological examination is of some value. One should also remember that when dealing with such type of lesions in a case with a history of contact, diagnostic clinical signs may be absent altogether in the early stage. The family history in this case shows the great liability of young children of an infectious mother to develop the disease from contact with the mother. Most had leprosy though three were tuberculoid cases, one was indeterminate and one had shown no sign of leprosy so far. It also shows that all the children so exposed, develop the disease and when it develops it is not always of the serious type.

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ERYTHEMA EXUDATIVE MULTIFORME

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Hebra (1899) first proposed the name 'erythema exudative multiforme', to a symptom-complex consisting of an inflammatory skin disease characterised by widespread lesions and bilateral conjunctivitis. Associated with the rash are constitutional symptoms of an ordinary respiratory infection or a toxic reaction involving the skin and the mucous membrane. The duration is short and the nature benign. Albert and Bazin were first to describe the ocular complications and Rigler gave a detailed description of these complications. Fuchs (1878) described a case of similar nature and termed it "Herpes Iris Conjunctivae". Stevens and Johnson (1922) reported two cases thinking them to be a new clinical entity but which proved identical with "Ectodermose Erosive Pluriorificielle" described by Peissinger and Rendu (1917). The same clinical picture was described by Badder (1925) under the name of "dermato-stomatitis". Lever (1944) considered involvement of the mucous membrane to be one of the varied manifestations of the systemic disease. This view was supported by Kove (1945). Sneddon (1947), and Murray (1947) who believed this syndrome to be a separate clinical entity unrelated to skin disease. Mamelok and Laval (1955) thought that the disease might be a variation of the same basic condition that caused ocular pemphigus specially since they resembled each other so closely. They concluded that the two conditions were only different varieties of a single entity (Infectious dermato-stomato-ophthalmitis of

Lunedei). These authors thought that different forms merge one into the other with only slight difference (the lesion in the skin being prominent in erythema exudative multiforme and in the mucous membranes in Stevens-Johnson Syndrome).

Case Report

R. L. a male patient of 35 years of age came to the outpatients with swollen lids, sticky discharge, chemotic severely congested conjunctiva with membrane formation over the palpebral part, which bled when the membrane was removed. The cornea was clear. The pre-auricular gland was enlarged and tender. The lips were dry and fissured and the buccal mucosa was ulcerated and covered with a thin white membrane in patches. The tongue was raw and ulcerated on its sides. The patient looked mildly toxic. He volunteered the statement that he had a rash over his hands and feet. Further examination revealed that his arms, legs and the whole of the back had a similar erythematopapular rash. The face which looked flushed, had a few papular patches. The temperature was 102°F. The lungs were clear.

Laboratory investigations—W.B.C. 13,000 per c.mm. with 70 per cent polymorphs.

The smear examination only showed Gram positive cocci. No diphtheria bacilli were detected.

Treatment—He was straight away put on avil, vitamin B complex and ilotycin tablets one of each three times daily. Locally the condition was treated symptomatically by a thorough lavage of the conjunctival sac with warm boric lotion and infiltration of the base of the membrane with aqueous solution of 200,000 units penicillin in one c.c. of water (Agarwal, 1953), drops of eyemide 30 per cent and ilotycin eye ointment four times daily. This treatment was continued for four days when membrane formation ceased and the discharge became watery, and congestion and swelling lessened. The rawness of the conjunctiva continued. The rash disappeared by the fourth day.

In the second week there was a tendency for symblepharon formation in the lower fornix. This was mildly broken by a smooth glass rod every time on the dressing days to avoid symblepharon formation and closure of the lids (Agarwal, 1955).

By the third week the watering, swelling and congestion all disappeared. There remained only a small fold of mucosa connecting the bulbar and palpebral conjunctivae in the lower fornix at six o'clock position which was left alone.

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CONGENTIAL SYPHILITIC RETROBULBAR NEURITIS

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Walshe (1947) defines retrobulbar neuritis as the selective affection of the maculopapillary bundle anywhere from the eye to the geniculate body. Others define it as the affection of the optic nerve behind the eyeball. Retrobulbar neuritis of syphilitic origin is not very common and that due to congenital syphilis is still less so. In Benedict's (quoted by Duke-Elder, 1947) series of cases of retrobulbar neuritis, syphilis (both congenital and acquired) had 0·9 per cent incidence. Positive Wassermann reaction of blood in cases of syphilitic retrobulbar neuritis is not always obtained. Berens and Goldberg's studies (quoted by Tassman, 1950) of 100,000 cases revealed positive reaction in 20 per cent of cases of optic neuritis and papillitis.

Case Report

A Hindu male child of 9 years was brought in with the complaints of headache and marked reduction of vision in the right eye on 23-9-57.

On examination the right optic disc showed extreme temporal pallor. Central scotoma was present. The visual acuity was reduced to finger count at 2-3 feet distance. The left disc was normal. The visual acuity in the left eye was 6/6. No other abnormality was detected in the eyes.

The nervous system was normal.

Laboratory investigations—Wassermann reaction of blood became positive on 29-9-57 after a provocative injection. On 1-10-57 slight albuminuria was present. It disappeared on 6-10-57.

Treatment—Procaine penicillin 300,000 units with crystalline penicillin G 100,000 units were injected intramuscularly daily for ten days from 29-9-57. Vitamin B complex was given from the same date. Bismostab starting from 1/4 c.c. rising to 1/2 c.c. was injected intramuscularly every week for ten such from 6-10-57.

The patient was re-examined on 21-11-57. The pallor of the right disc had improved remarkably. The visual acuity in the eye had improved to 6/9 (partial).

On 24-2-58 Wassermann reaction came to be positive again after provocative injection. The visual acuity in the right eye was 6/6 and smallest Indian language print could be read easily. The pallor had recovered so well that the two discs looked alike. A second course of antisyphilitic treatment is being given and the patient continues to be under observation.

Comments

Development of uni-ocular central scotoma with profound loss of vision and its subsequent complete recovery very strongly suggested the involvement of the maculopapillary bundle. Negative Wassermann reaction at an early age suggested congenital syphilis as the cause.

Headache was present. But pain on ocular movement, tenderness on pressure of the eye, or ill-sustained pupillary reaction to direct light were not prominent.

An interesting feature of the case was the presence of extreme temporal pallor of the optic disc in the affected eye and its reversal *pari passu* with the recovery of vision. Ordinarily pallor of the optic disc is equated with optic atrophy, which is irreversible, resulting in visual and field loss. In some cases, however, optic disc may exhibit pallor but visual acuity may be normal. Conversely, optic atrophy may be present when the nerve head appears grey-red (Walshe, 1947). Pallor of the disc is attributed to real atrophy of the nerve fibres, or glial proliferation, or ischaemia due to attenuation of the blood vessels or their spasm. The last one alone seems to produce manifestations which may be reversed.

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TRICHOMONAS VAGINALIS INFESTATION OF SUBURETHRAL CANAL

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Introduction

Though *Trichomonas vaginalis* infestation was first described as a cause of leucorrhoea in women as far back as 1836, it has become a well-recognised condition only during the last 25 years. The parasites have been recovered from the vagina, vaginal portion of the cervix uteri, stopping short at squamomucosal junction, urethra, Skene's glands, Bartholin's ducts and in rare instances from the rectum. They flourish during the reproductive period of women and have been found in 60 per cent of women with vaginal discharge and even in a fairly large percentage of women who were clinically normal. However, the infestation in the males is more frequently encountered than was generally suspected in the past, though different investigators noted wide variations of its incidence in the males. It is now a recognised aetiological factor in non-specific urethritis (12-70 per cent), notwithstanding the large number of asymptomatic men harbouring the flagellates. "There is, however, a low incidence of *T. vaginalis* in patients suffering from gonorrhoea" (Feo *et al*, 1950). They are generally found in the anterior urethra, less commonly in the posterior urethra causing urethritis and in majority of cases they rapidly pass along the genital tract to the prostate, seminal vesicles and rarely to the testes causing chronic relapsing prostatovesiculitis, and epididymitis (Liston and Lees, 1940).

The *T. vaginalis* Donne have been reported to have passed along the urinary tract in both the sexes to the bladder and renal pelvis causing cystitis (Nitschke, 1936) and pyelitis. They have been demonstrated beneath the prepuce in the secretions causing balanoposthitis and also in the urine sediment; they have been found in 40 per cent of the vesiculoprostatic secretions of husbands whose wives had *T. vaginalis* vaginitis and even in those people who were free from urinary symptoms. Infection of the prostate has been variedly reported. The most common form in chronic cases is the morning drop (Coutts *et al*, 1955). Manwell (1934) maintains that trichomoniasis is a systemic disease.

The *Trichomonas vaginalis* does not penetrate the mucosa of the urethra; it is a surface parasite; it may be associated with other infections of the urethra or with stricture. Secondary invading organisms are always present in the urethral discharge and mixed infection (infection along with non-haemolytic streptococci) is considered by many authors to be an essential factor in the causation of symptoms and signs of urethritis attributable to the *T. vaginalis* Donne. It is possible to demonstrate the protozoa in sections and Keutel (quoted by King, 1957) has shown, at the International Symposium on *T. vaginalis* at Reimes in 1957, sections of epididymis in which it could be identified in the tubules.

Case Report

A male, aged 41, was admitted at Erskine Hospital, Madurai on 20-9-57 for urethral discharge and a small swelling in the prepuce discharging pus, for 1½ years.

The patient had white discharge 16 years ago with a number of recurrences, each lasting for a few days, during the last 2 years. The preputial swelling started as a small subcutaneous one on the outer aspect in January 1956 and increased in size. On treatment locally with indigenous drugs it burst with discharge of pus. Subsequently he used to squeeze and let out the pus; it stopped draining a month later.

On examination scanty purulent urethral discharge was present. There was an irregular shaped subcutaneous cyst 10×3×3 mm. on the prepuce at 7 o'clock position 3/4" proximal to the edge. It was adherent to the skin at two places close to each other. Two puncta were seen there; one was closed and the other on pressure, exuded thick creamy sebum-like matter. On palpation it appeared to be a short, thickened, fibrous, tubular structure extending from the patent external punctum to a pin-point punctum on the inside of prepuce near the proximal edge of the coronal sulcus at 7 o'clock position 1/4" proximal to the orifice of left Tyson's duct.

Epidemiology—By way of epidemiological confrontation his wife, pregnant 12 weeks, was examined. She had leucorrhoea due to *T. vaginalis*.

The urethral and cervical smears revealed epithelial cells, pus cells and banal organisms. Kahn test was negative.

Laboratory investigations—The following are the results of the laboratory investigations conducted on the patient:

1. Blood Kahn test—negative.
2. The urethral smear and the squeezed out material from the cystic lesion revealed epithelial cells, pus cells and banal organisms.
3. Darkfield examination of the urethral discharge showed *Trichomonas vaginalis*.
4. First glass urine contained threads and the second glass urine was clear.
5. Darkfield illumination examination of the squeezed out material showed non-pathogenic spirochaetae and *T. vaginalis*.
6. The prostatic smear and urinary deposit following a prostatic massage did not reveal *Trichomonas vaginalis*.

Treatment—Circumcision was done under local anaesthesia and the inflamed tract excised. The naked-eye appearance was that of a firm fibrous tubular structure with a patent lumen containing yellowish material.

Histopathological examination—The structure was found to be that of an aberrant suburethral canal with inflammatory reaction. But no *T. vaginalis* could be detected either within its lumen or its wall.

No special treatment was given for the urethritis.

Comments

The diagnosis of the case is clear; it is one of *Trichomonas vaginalis* Donne infestation of the prepuce as well as of the urethra. Before histopathological examination was done it was considered that it could possibly be an involvement of a chronically inflamed preputial gland or steatoma as the material from it resembled infected sebum and saprophytic spirochaetes were seen in the discharge. But the examination of several sections of the excised tissue failed to reveal any glandular structure. Only an inflamed aberrant suburethral canal was noted.

Summary

Instances of *T. vaginalis* infestation of male urethra and even of preputial sac have been described but its occurrence in a suburethral canal is rare. A case of *T. vaginalis* infestation of an aberrant suburethral canal in the male urethra has been reported with a brief review of relevant literature.

Acknowledgment

I gratefully acknowledge the help of Dr. S. P. Vedachalam, Professor of Pathology, Madurai Medical College for the study of the histopathological section. I also wish to express my thanks to the Superintendent, Government Erskine Hospital, Madurai, for permission to report this case.

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CALCUTTA, AUGUST 1, 1958

MEDICAL TEACHERS

Far-reaching changes have taken place in the art and science of medicine during the last thirty or forty years and medical education in that light requires progressive modification of the medical curriculum. What to teach, how much to teach and how best to teach are the problems which face the teachers of medicine all over the world. It is natural for the medical teachers, while referring to the curriculum, to think of the difficulties of deciding how many hours they should allot to this or that subject and of co-ordinating and relating such decision to the duration of the medical training and to the examinations that students have to face. The curriculum is of course important, but the structure and function of medical education, as a whole, are thought stimulating and require periodical critical re-examination by the medical educators.

With this end in view, the first World Conference on Medical Education was held in London from the 24th to the 29th August 1953 under the auspices of the World Medical Association. In opening the Conference, Sir Lionel Whitby, the President said: "We are out to try to discover how best to teach the young men and women who are going to be the doctors of the future. During this week teachers of medicine and educationists from all parts of the world will put forward their views not only on medical but on general education ; they will discuss techniques of teaching as well as the extremely important social implications of medicine at the present day." Miss P. Hornsby-Smith, M.P., Parliamentary Secretary to the Ministry of Health, while conveying a welcome on behalf of the Minister said: "The interest of the Ministry of Health in this Conference is paramount, since we are responsible in this country for the National Health Service, the quality and efficiency of which in its major sphere must depend in the last resort on the humanity, integrity, knowledge and skill of the doctors working in it."

As teaching in medical subjects is a highly specialised problem, the Bhore Committee remarked: "In any scheme for the expansion of medical education, the most important consideration is the provision of teaching staff possessing proper qualifications and the necessary aptitude for the work." The Committee also stated: "We do not consider it desirable to recruit persons merely because of their academic attainments if they do not possess teaching experience and the general qualifications necessary for the higher grades of professional staff, i.e., research work, specialist qualification and teaching ability" . . . "It is unfortunate that, at present, medical research plays a very subordinate part in most of the medical colleges in this country. This is, however, not altogether the fault of these institutions. There has not been adequate encouragement nor have facilities for research been always sufficient, while paucity of staff has thrown much routine work on the teachers, leaving them little time or energy to the task of research."

Regarding the staff in pre-clinical subjects, the Bhore Committee recommended: "It is important that, if properly qualified members are to be recruited, the staff should be well paid". . . "That the number of permanent senior staff, Professors, Additional Professors, Assistant Professors or Senior Demonstrators should be 1 : 30 or 40, while the Junior Demonstrators should be 1 : 10 students in the Department." . . . . "That a proportion of the Demonstrators should also be part-time clinical assistants in the hospital".

Regarding the staff in clinical subjects, the Bhore Committee recommended in 1946: "Full-time heads of the departments of Medicine, Surgery and Obstetrics, together with full-time assistants, are needed to organise teaching and research in the subjects." . . . . "A full-time professor should be selected for his outstanding abilities and should have had a large experience of the practice of his profession, both domiciliary and institutional. His ability to teach and to enter into cordial relations with his colleagues should be taken into consideration. His salary should be such as to secure the right type and to free him from all financial embarrassment. A salary of Rs. 1,500-2,000 is not excessive." . . . "Part-time clinical teachers are of value as they are in contact with problems of general and consulting practice and are best-fitted to train future general practitioners. By their number they provide variety of experience and teaching". . . "They must, however, devote an adequate part of their time to teaching and should receive remuneration for teaching duties and hospital service". . . . "Part-time

clinical teachers may be appointed for a period of five years in the first instance and may be continued for further periods of five years, subject to a satisfactory review of work at the end of each period."

As regards status of medical teachers, the Committee recommended: "It is of fundamental importance that medical teachers should have complete freedom in the control of the beds in their charge and in their methods of teaching and treatment. The teacher should have full clinical charge of the beds allotted to him subject only to the general administrative supervision of the Dean, or Superintendent of the hospital.". . . "The full-time professor should, however, have no control over the clinical work of part-time teachers nor exercise any authority over other members of the staff who are not working under him directly, except in the matter of co-ordinating teaching in the department concerned." . . . . "Salaries may vary in the different grades but should be such as to attract in each grade the right type of person."

Having set forth, in the preceding paragraphs, the background and proper perspective for medical education and appointment of medical teachers, we would now examine some of the basic principles enunciated by the Government of West Bengal recently, in this connection. Under the terms and conditions of the newly created "West Bengal Health Service" by the Government of West Bengal, the Government have stipulated that: "For the present, all posts in teaching institutions in Greater Calcutta and in rural areas will be non-practising". . . . "There shall be no pay for any particular post". . . .

"The new scheme shall apply both to the existing incumbents and to future recruits". . . . "On exercising their option for the new terms and conditions of service, contract officers will be absorbed in the W.B.H.S. permanently and be liable to be transferred to any post in the cadre in the exigencies of public service and will have no claim to the rights and benefits admissible under the contract. *These rules will also apply mutatis mutandis to those who have been appointed to Professorial or analogous posts* on the recommendation of the Public Service Commission on a temporary basis."

From the foregoing paragraph, it is obvious that the West Bengal Government have not attached due importance to medical education and the problems relating to it while formulating their scheme of rationalisation of health services in West Bengal. It must be remembered that it takes a good many years to produce a medical teacher and West Bengal has no surplus of medical educators if the medical colleges are staffed adequately. It is, therefore, imperative for the State Government to lay down that, except those who would volunteer for some reasons, to be transferred to administrative or other special posts, *no* medical teacher of five years' standing should be transferred to any non-teaching post. The terms and conditions of service of all medical teachers of various categories must be considered separately and these should not be mixed up with those of other medical and public health officers serving the Government. It may be mentioned, in this connection, that when the Ministry of Health, Government of the United Kingdom prepared their scheme of National Health Service, they formulated, in the year 1949, entirely separate terms and conditions of service for the pre-clinical medical teachers as well as the different categories of medical teachers of the clinical departments.

Under the National Health Service Scheme of U.K., some clinical teachers were appointed, on a full-time basis, on payment of high and attractive salaries, distinction awards and allowances ranging up to a maximum remuneration of about six thousand pounds per annum. A very large number of clinical teachers were also appointed, on a part-time basis, on adequate salaries, distinction awards and allowances. The Government of U. K. consulted the representatives of the medical profession and sanctioned payment of remuneration to the part-time clinical teachers, on the basis of the proportion of the hours devoted for their duties in the college and the hospitals. Thus they were allowed to draw 63·6 to 86·3 per cent of the remuneration drawn by the full-time staff of similar categories.

In conclusion, we would request the Government of West Bengal to reconsider their scheme and revise it in the light of the opinion expressed by the international and Indian experts in medical education and in consultation with the Indian Medical Association. The Association wishes to stress, once again, that there must not be any difference in status and remuneration between the administrative heads on the one hand and the professors, senior specialists and research workers on the other to avoid scientific personnel giving up scientific work and hankering after administrative posts.

CURRENT MEDICAL LITERATURE

Master Two-Step Test in Coronary Artery Disease

RUSSEK, H. I. (*J. A. M. A.*, **165**: 1772, 1957) of Cardiovascular Research, U.S.A. Public Health Service Hospital, N.Y., writes:

The Master two-step test is a standardized exercise that permits the making of an electrocardiogram immediately after the activity terminates. The main criterion of the result is the behavior of the S-T segment of the tracing; depression of more than 0·5 mm. in any lead is considered a positive result. The test was applied to 186 patients known to have either angina pectoris or a healed myocardial infarction. By the criterion of ischaemic S-T segment depression alone the test was positive in 61·3 per cent; when Master's other criteria were also imposed, the test was positive in 81·7 per cent. The test was applied further to 108 normal persons. By the criterion of ischaemic S-T segment depression alone the test was negative in all; when Master's other criteria were also imposed, the test was positive in 19·4 per cent. While a negative result does not exclude coronary insufficiency, a positive one strengthens the diagnosis of suspected coronary disease. Although the only conclusive evidence of coronary insufficiency is believed to be ischaemic S-T segment depression, fewer cases escaped detection when all of Master's criteria were utilized. When sound clinical judgment is employed in conjunction with the test, overdiagnosis is infrequent.

Changes in Serum Pseudo-cholinesterase Levels

MOORE, C. B., BIRCHALL, R., HORACK, H. M. AND BATSON, H. M. (*Am. J. M. Sc.*, **234**: 538, 1958) from the Department of Internal Medicine, Ochsner Clinic, New Orleans, Louisiana give below the summary of the results of 1089 serum cholinesterase determinations done in 160 patients and 100 normal subjects:

The results of serial determinations have been of significant clinical value in diseases of the:

A. HEART. 1. The only value appears to be prognostic, since a persistently falling serum cholinesterase level occurred only in patients who did not survive.

2. It has no value in the routine management of a patient with a classical myocardial infarction who is responding favourably to therapy.

B. LIVER. 1. The serum cholinesterase levels are normal in obstructive diseases of the biliary tract and depressed in active hepatocellular disease, and appear to be more sensitive than the serum transaminase level in differentiating these.

2. The serum cholinesterase levels are helpful in indicating the presence of activity in parenchymal disease of the liver.

3. Normal serum cholinesterase levels offer suggestive evidence of the absence of metastasis to the liver in a patient with known carcinoma elsewhere.

C. MUSCULOSKELETAL SYSTEM. 1. The serum cholinesterase test is of value in differentiating dermatomyositis from other collagen diseases.

4. In general, in those diseases in which there is an increase in serum transaminase levels, there is a fall in serum cholinesterase levels. However, with respect to degree and time of change, the disparity in the curves of the two enzymes indicates that there is no true parallel in their behaviour and that they bear no relation to each other. Interpretation of any single serum cholinesterase determination is impossible because of the large normal range, and interpretation of even serial determinations is difficult because of its lack of specificity. Yet, as already stipulated, in certain situations serial cholinesterase determinations may be of real clinical value.

Apthous Ulceration of the Mouth

TRUELOVE, S. C. AND MORRIS-OWEN, R. M. (*Brit. M. J.*, **1**: 603, 1958) from the Radcliffe Infirmary, Oxford, in giving the summary of their observations on the treatment of apthous ulceration of the mouth describe a method of using a water-soluble compound of hydrocortisone incorporated into tablets which dissolve slowly in the month, the saliva then acts as a medium of transport to the mucosal surface.

Treatment has been given to 52 patients, of whom 23 were examples of the common or minor form of the condition, 22 were examples of the major form, and 7 were special cases of muco-membranous disease or of aphthous ulceration complicating another disease.

With one exception, the minor cases have obtained rapid relief of pain and healing of the ulcer has been accelerated.

The major cases have generally derived great benefit from the treatment. All showed initial improvement. With maintenance treatment some have been completely free of ulceration during several months of observations. Others have had minor ulceration but are greatly improved. Only one has shown a tendency to relapse during treatment.

The special cases have likewise shown a good response.

Aspirin and Diabetes Mellitus

REID, J., MACDOUGALL, A. I. AND ANDREWS, M. M. (*Brit. M. J.*, **2**: 1071, 1957) from the Clinical Chemotherapeutic Research Unit of the Medical Research Council, Western Infirmary, Glasgow, write:

Disappearance of glycosuria and the return of fasting blood sugar to normal in a young diabetic during aspirin treatment for acute rheumatism led to reinvestigation of the effect of salicylate in diabetes mellitus.

An intensive two-weeks course of aspirin abolished glycosuria and lowered the fasting blood sugar to normal or near normal in seven mild to moderately severe diabetics.

No decisive effect on glucose tolerance was obtained, though the blood-sugar curves were always lower during aspirin administration than they were either before or after.

Moderate ketonuria in two patients was reduced to normal with aspirin.

Clinical improvement accompanied the biochemical changes induced by aspirin, and, while serious toxic manifestations were not conspicuous, tinnitus and deafness were annoying. The possible place of aspirin in the treatment of diabetes mellitus is discussed.

The action of aspirin in diabetes mellitus has been located in the tissues, and this is of interest in the light of the proper establishment of the drug as a peripheral-acting metabolic stimulant (*Authors' Summary*).

Treatment of Rheumatoid Arthritis

SAVAGE, O., CHAPMAN, L., ROBERTSON, J. D., DAVIS, P., POPERT, A. J. AND COPEMAN, W. S. C. (*Brit. M. J.*, **2**: 1257, 1957) from the Department of Rheumatism and Biochemistry, West London Hospital, give in the following lines the summary of their observations on the clinical course and corticosteroid excretion of patients with rheumatoid arthritis during long-term treatment with corticotropin:

Since the anti-inflammatory effects of cortisone and corticotropin in rheumatoid arthritis were first reported the main work in both clinical and the biochemical fields has been on oral steroids.

The interest in corticotropin was originally stimulated by the finding that, after using it for three years as an alternative to cortisone, six times as many patients had gone into remission. This observation has not been confirmed in the subsequent series reported here.

However, it is learnt that treatment of severe rheumatoid arthritis with self-injected corticotropin (ACTH) over long periods is a practical procedure, and when used with biochemical estimations has certain advantages over oral cortisone and its newer analogues. These advantages are: (1) The level of adrenal stimulation produced by corticotropin can be estimated by measurement of the total urinary excretion of 17-hydroxycorticosteroids [17-(OH)CS]. This can be done for out-patients by the method described. (2) When corticosteroid excretion is seen to fall the dose of corticotropin can be raised before severe clinical relapse occurs. (3) When the corticosteroid excretion is seen to rise it is possible to reduce the dose of corticotropin before excessive adrenal stimulation occurs.

41 patients have been studied with the help of biochemical estimations from the beginning of treatment. In every case suppression of activity with a fall in sedimentation rate followed the administration of corticotropin in a dose which proved sufficient to raise the urinary excretion of 17-(OH)CS by a significant amount. In 23 cases the excretion was doubled, and in 17 it was increased by more than 50 per cent. We have not seen a single case where clinical suppression of the disease was not accompanied by a significant increase in corticosteroid excretion.

After the initial response, dosage has had to be adapted to the fluctuation of the disease activity, or the development of an altered sensitivity to the hormone. It has been observed that it has not been necessary to maintain a high level of adrenal stimulation in order to obtain continued clinical improvement; and that adequate clinical and biochemical response can be maintained for years with only minor adjustments of steroid dosage. The occurrence of remission is recognized if at any time during a period of satisfactory clinical response a fall in the patient's 17-(OH)CS excretion is noted, without any concurrent relapse of the disease. One of the difficulties in the use of corticotropin is the variation in the strength of batches. This is a matter which is being explored continuously by the manufacturers, and a constant standard will undoubtedly be achieved in time.

It has been observed that the more severe side-effects such as hypertension and glycosuria occur only when a high level of hydroxycorticosteroid excretion has existed for some weeks and that they are reversible. Androgenic side-effects, particularly acne, occur commonly in women before the menopause with only slight adrenal stimulation. Absence of dyspepsia in the patients under review is quite impressive. Only one developed peptic ulceration, whereas in 83 consecutive cases treated with oral steroids during the last five years 13 have developed gastric or duodenal ulceration. If corticotropin is withdrawn, relapse of the arthritis will follow, but this is not accompanied by the distressing general symptoms which attend the withdrawal of cortisone and other oral steroids.

It is considered that biochemical control during long-term treatment of severe cases of rheumatoid arthritis with corticotropin will result in a more accurate and less dangerous dosage regime than was formerly practicable. If a simple method were devised for testing the urinary corticosteroid excretion within a fairly wide range it would bring this additional method of control into the realm of routine clinical medicine.

A method of controlling dosage is described and discussed with reference to long-term treatment with biochemical estimations. It seems that the use of steroid therapy in a severe case of rheumatoid arthritis will probably not alter the basic course of the disease; the satisfactory suppression of the inflammatory element will, however, enable the patient to regain independence and live a normal life.

Steroids in Nephrotic Syndrome

GOODMAN, H. C. AND BUXTER, J. H. (*J.A.M.A.*, **165**: 1798, 1957) of the Laboratory of Cellular Physiology and Metabolism, National Heart Institute, National Institute of Health, Bethesda, Md., give in the following lines the summary of their clinical observations on therapy of nephrotic syndrome with prednisone and other steroids:

Of 20 patients with complete idiopathic nephrotic syndrome, 12 are well, 4 are improved, and 4 are unimproved or dead after steroid therapy. Steroid treatment was ineffective in one additional patient with nephrotic syndrome due to renal amyloidosis and in three patients with proteinuria but without the hypoalbuminaemia and hyperlipoidaemia seen in the classical nephrotic syndrome.

The therapeutic regimen found effective for the majority of patients was the daily administration of 40 mg. prednisone or 160 mg. hydrocortisone for as long as necessary to achieve the maximum clearing of proteinuria and increase in serum proteins, usually about one month, followed by gradual reduction of the dosage. In responsive patients a diminution in proteinuria was observed within the first 10 days of steroid therapy. In six patients who responded well but relapsed at various periods after discontinuing therapy, the initially effective regimen was repeated with success. Only one patient required maintenance therapy for recurrent relapses and

in this case maintenance dosage below full therapeutic dosage was not successful. The simplest and most sensitive indication of a change in the disease was provided by frequent determination of the 24-hour urine protein. We have sharply distinguished between the diuresis accompanying a real remission and the "symptomatic" diuresis which may occur on discontinuing therapy in patients who have had no change in proteinuria or serum proteins.

In this series of patients the response to steroid therapy in adults did not differ greatly from that in children, and microscopic haematuria and moderate renal insufficiency did not necessarily preclude a good response. No essential difference in effectiveness or side-effects was noted between prednisone and hydrocortisone.

Haemorrhage from the Upper Gastrointestinal Tract

WEBBER, J. M., NASH, R. C. AND GREGG, L. A. (*J.A.M.A.*, **165** : 1899, 1957) from the Veterans Administration Hospital and the Department of Medicine, School of Medicine, University of Pittsburgh, from an analysis of 300 unselected cases of gross upper gastrointestinal haemorrhage observe :

Duodenal ulcer accounted for more than half the cases, with a mortality rate of 3 per cent. The outcome was considerably less favourable with other lesions. In the case of bleeding from oesophageal varices associated with hepatic cirrhosis, fewer than 50 per cent of patients survived. Bleeding duodenal ulcer, common in youth, became relatively less frequent toward middle life, to be replaced in later years by lesions more haemorrhagenic. The over-all fatality rate for the series was 14 per cent. In most of the fatal cases there was antecedent disease of the heart and blood vessels, lungs, liver, or kidneys. The direct relationship between advancing age and rising mortality depended in part, at least, on the increasing frequency of complicating disease with successive decades and on the changing incidence of the various bleeding sources from the more benign to the more dangerous.

Bleeding is especially hazardous (1) when it fails to cease and its precise source is unknown and (2) when the patient is already burdened with some other disease which lowers tolerance to haemorrhage. Further improvement in outcome in upper gastrointestinal haemorrhage requires a reduction in the number of cases of undetermined origin and a more effective approach in those cases in which there is preexisting impairment of the cardiovascular system, lungs, liver, or kidneys. The authors advocate a vigorous programme of management which includes liberal use of blood transfusion, prompt employment of the direct diagnostic techniques of radiology and endoscopy when a positive diagnosis as to source has not previously been made, and surgical treatment without delay in those cases in which the site is known and the bleeding evidently continues or recurs.

Inactivation of Human Chorionic Gonadotrophin by Addition of Drugs

BANIK, U. S. AND CHAKRAVARTI, H. S. (*Ann. Biochem. & Exper. Med.*, **17** : 63, 1957) from the Indian Institute for Biochemistry and Experimental Medicine, Calcutta, write that the presence of chorionic gonadotrophin in the urine of pregnant women and its detection by biological assay help in the diagnosis of pregnancy and other related conditions. During the routine work it was found that in a few cases the urine samples from pregnant women who had taken quinine and ergot on medical advice gave negative reactions when assayed in the usual way. This made the authors study the effect of certain drugs on the gametokinetic action of chorionic gonadotrophin.

It has been shown that quinine, ergot, atropine, emetine and *m*-xylohydroquinone when used individually cause inhibition at certain concentration when injected with an effective dose of HCG (human chorionic gonadotrophin). The inhibitory effect is actually not due to the destruction of the hormone or direct action of the drugs on the testes of the toad, but due to the paralysing effect on the lymph heart system of the toad. The inhibitory effect of the drugs on the activity of the hormone can be eliminated by dialysis.

These observations have some practical implications. In a case showing a false negative reaction if the urine sample is dialyzed prior to testing, the false negative reaction could be easily avoided. Moreover, in such cases, it may be convenient to inject the urine or the acetone-extract of the urine directly in the heart of the toad to avoid the paralysing effect of the drug.

It is highly desirable that in a case of suspected pregnancy, a negative result with toad test should be reinvestigated by dialysis or by direct injection of pregnancy urine into the ventricle of the toad to avoid any false reaction. Acetone-extract of such urine may also obviate this difficulty.

Effect of m-xylohydroquinone on the Peripheral Action of Progesterone

BANIK, U. K. AND CHAKRAVARTY, H. S. (*Ann. Biochem. & Int. Med.*, **17** : 139, 1957) from the Department of Applied Physiology and Endocrinology, Indian Institute for Biochemistry and Experimental Medicine, Calcutta, write :

m-xylohydroquinone which is an active principle of the common garden pea (*Pisum sativum* Linn.) is claimed to be an effective contraceptive when taken orally by the female partner as it causes an inhibition of the peripheral action of progesterone and thereby prevents implantation of the fertilized ova into the endometrium.

This inhibitory peripheral action of *m*-xylohydroquinone (*m*-XHQ) on progesterone has not been adequately confirmed by biological experiments and the claim of its being an orally effective contraceptive has been adversely criticised by other workers.

In view of the conflicting reports the authors made an experimental study of the effect of *m*-XHQ on the peripheral action of progesterone in 12 immature female rabbits. The effect of progesterone was evaluated from the degree of proliferation of the endometrium of the rabbit previously primed with oestrogen, and also from the antagonistic action of progesterone on the increased alkaline phosphatase activity of the cells of endometrium induced by oestrogen. By both the methods it was found the *m*-xylohydroquinone failed to inhibit the action of progesterone on the uterus.

CURRENT TOPIC

EDUCATION*

Medical education is the basis of all types of medical care and hence, of the health of the world. The economy of any country is largely dependent on the health of its people. To support freedom of medical education, raise its standards and thus improve the health and economy of the various countries has been one of the activities of The World Medical Association since its inception as a means toward implementing objectives four and six :

"(iv) To organize an exchange of information on matters of interest to the medical profession."

"(vi) To assist all people of the world to attain the highest possible level of health."

1947—1948

BASIC AND POST GRADUATE MEDICAL EDUCATION SURVEYS :

The 1st General Assembly initiated two surveys in the field of medical education. The first, a comparison of basic or undergraduate medical education in the various countries. This survey covered the following points :

Medical Schools—The number in each country; adequacy of this; faculty and hospital affiliations and the agency awarding the degrees in medicine and regulating the educational standards of the school.

Student Body—Selection of applicants; and their age.

Curriculum—Length, courses scheduled; pre-clinical and clinical training; and practical hospital experience.

Examinations.

Internship or practice under supervision.

Ethical Conduct.

Student Organizations.

The second survey compared postgraduate medical education and specialist training in the various countries under the following topics :

Definitions.

Standards and Schools.

Pre-requisites and requirements.

Examinations.

Certificates or diplomas.

Faculty and teachers.

Fees and grants.

Status of postgraduate education obtained in a foreign country.

Number and availability of specialists.

Both surveys provided opportunity for the medical association in each country to evaluate the various phases in medical education and suggest ways and means through which it could be improved.

A basic principle to which the Council subscribes is that the "consumer' of' medical education, that is, the doctor himself whether he be a general practitioner or a specialist is the best critic of the education he has received. The general practitioner is an accurate judge of the basic medical education program leading to qualification and licensure as he, and only he, knows the adequacies and inadequacies that he met in his first years of medical practice.

Draft reports on "Standards of Medical Education" and "Post Graduate Medical Education and Specialist Training" were approved for publication by the IInd General Assembly.

UNIVERSAL MEDICAL QUALIFICATIONS :

The problem of resettlement of displaced doctors led the Council to consider various suggestions relative to the desirability of working toward universal medical qualifications. While Council recognised the impracticability of implementation of such a program, it transmitted these reports to the member associations for their information and consideration. Discussion of the problem of establishing universal medical qualifications at the IInd General Assembly resulted in the project being abandoned as an impractical project to implement.

1948—1949

At the 4th Session of the Council, a Committee on Post Graduate Medical Education and Refresher Courses was established. Those named to serve were :

Dr. J. A. Pridham (UK), *Chairman*. Dr. J. A. Bustamante (Cuba). Dr. A. Hartwich (Austria). Dr. R. Marquis (France). Dr. S C.. Sen (India).

Publication of the surveys on "Standards of Medical Education" and "Post Graduate Medical Education and Specialist Training" were postponed in order to include information obtained from additional member associations.

RECOMMENDED EXPERIENCE BEFORE PRACTICE :

A resolution was adopted recommending :

1. An additional period of training in an approved post following completion of the ordinary prescribed medical school course prior to engaging in private practice;
2. Adequate theoretical and practical courses in the field of the specialty for those desiring to become specialists;
3. Appropriate professional bodies to determine the length of these periods and secure observation of their conditions;
4. Make available information relative to post graduate education and develop exchange education programs.

1949—1950

The Seventh Council Session named the following Medical Education Committee :

Dr. J. A. Pridham (UK) *Chairman*. Dr. J. A. Bustamante (Cuba). Dr. P. Glorieux (Belgium). Dr. Dag Knutson (Sweden). Dr. S. C. Sen (India). Dr. R. L. Sensenich (USA). Dr. Lorenzo Garcia Tornel (Spain).

* From the First Decade Report of W.M.A.

DOCTOR SHORTAGES AND SURPLUS :

The Committee and the Council considered the problems of doctor shortage and surplus in connection with :

(*a*) Resettlement of displaced doctors.
(*b*) Shortage of qualified doctors in some nations of the world.

It was noted that even within nations with sufficient doctors for the population, there tended to be a universal shortage of doctors in rural or scarcely populated areas. Less developed hospital and laboratory facilities; poorer schools for education of the doctor's children and isolation from the stimulation of colleagues, medical organization and social life were recognized as factors which needed to be overcome.

The problem of nations that had a surplus of doctors —that is more doctors than the population of the country could support or needed for adequate medical care was attributed to the displaced person situation; the tendency in some countries to admit unlimited numbers of students to medical schools, and the growing interest of students in entering the medical profession.

The difficulties encountered in effecting a transfer of doctors from nations having a surplus number of doctors to those needing more doctors fell under two headings :

Legal—Licensure requirements.
Integration—Language, culture and acceptance problems.

The IVth General Assembly directed that the Council and Committee on Medical Education continue its analysis of this problem in the hope that a solution that could be implemented might be developed.

WHO EXPERT COMMITTEE ON TECHNICAL TRAINING OF MEDICAL AND AUXILIARY PERSONNEL :

A report was received relative to the activities of the World Health Organization's Technical Committee on Training Medical Personnel and its willingness to provide for an exchange of views on the subject with The World Medical Association. Dr. P. Glorieux and Dr. Jean Maystre were designated to represent the opinions of the medical profession of the world before this WHO Committee. Later, reports on the activities of this WHO Expert Committee indicated that it planned to initiate a technical discussion of the subject at its Fourth Health Assembly, May, 1951. The topics to be discussed were :

(*a*) Undergraduate medical education.
(*b*) Specialist training in public health.
(*c*) Training and use of auxiliary personnel in medical and health services.

The Committee recommended and the Council agreed that The World Medical Association was vitally interested in all these topics—especially in that of undergraduate medical education. Hence, it was deemed essential that representatives of The World Medical Association attend the WHO discussions on these topics.

1950—1951

The 10th Council Session named the following to serve on the Medical Education Committee :

Dr. J. A. Pridham (UK) *Chairman*. Dr. J. A. Bustamante (Cuba). Dr. Hugh Clegg (UK). Dr. Leon Gérin Lajoie (Canada). Dr. P. Glorieux (Belgium). Dr. Dag Knutson (Sweden). Dr. S. C. Sen (India). Dr. R. L. Sensenich (USA). Dr. Lorenzo Garcia Tornel (Spain).

The WHO technical discussion on medical education was held in May. The World Medical Assocation was represented at these discussions by :

Dr. Louis H. Bauer, *Secretary General*. Dr. Dag Knutson. Dr. Jean Maystre.

MEDICAL EDUCATION CONFERENCE :

Attendance at this WHO discussion and an informal meeting with representatives of the World Health Organization resulted in the recommendation to Council that The World Medical Association undertake sponsorship of a World Congress on Medical Education. The Education Committee established the general aims and subject matter for this Congress to be :

(*a*) Establishment of the aim of undergraduate medical education
(*b*) Requirements for entry into medical school
(*c*) General character of the curriculum in undergraduate medical education.

Special emphasis was placed upon the importance of obtaining the opinion of general practitioners as well as medical educators on all subjects considered.

The Conference was scheduled to take place in 1953. Other international organizations invited to participate in the Conference were :

The World Health Organization
CCICMS (became CIOMS)
UNESCO
International Association of Universities

All accepted except UNESCO.

CONFERENCE COMMITTEES :

The Committees named to plan The First World Conference on Medical Education were : (representatives of other international organizations were named later, but are listed here to show the complete structure)

Organizing Committee

Dr. T. C. Routley, *Chairman* (WMA and Canada). *Sir Henry Cohen (WMA and UK). Dr. Hugh Clegg (WMA and UK). Dr. P. Glorieux (WMA and Belgium). Dr. Dag Knutson (WMA and Sweden). Dr. J. A. Pridham (WMA and UK). *Sir Lionel Whitby (WMA and UK). Dr. W. P. Forrest (WHO). Dr. J. L. Troupin (WHO). Mr. H. M. Keyes (IAU). Dr. K. Soddy (CIOMS). Dr. Louis H. Bauer, *Secretary* (WMA and USA).

Program Committee

Sir Lionel Whitby, *Chairman* (UK). Prof. W. Melville Arnott (UK). Dr. Louis H. Bauer (WMA and USA). Sir Henry Cohen (UK). Dr. W. P. Forrest (WHO). Dr. Lorenzo Garcia Tornel (WMA and Spain). Dr. P. Glorieux (WMA and Belgium). Dr. E. Grzeg-

* Illness made it necessary for Sir Henry Cohen, who had been named President of the Conference, to withdraw and Sir Lionel Whitby became President of the Conference and a member of the Committees.

orzewski (WHO). Dr. T. Rowland Hill (UK). ‡Prof. A. Hurtado (Peru). ‡Dr. Victor Johnson (USA). Prof. L. Justin-Besancon (France). Mr. H. M. Keyes (IAU). Dr. Dag Knutson (WMA and Sweden). ‡Sir A. L. Mudaliar (India). Dr. J. A. Pridham (WMA and UK). Dr. T. C. Routley (WMA and Canada). ‡Prof. René Sand (Belgium). Dr. Austin Smith (WMA and USA). Dr. K. Soddy (CIOMS and UK). Dr. J. L. Troupin (WHO). Dr. Hugh Clegg, *Secretary* (WMA and UK).

Prof. W. Melville Arnott (UK) was selected Deputy President. A Vice-President was chosen to preside over each section. These all became members of the Program Committee. Prof. René Sand (Belgium) died just before the Conference and was replaced by Prof. A. Stampar (Yugoslavia) as Vice President.

Press and Publicity Officer—Mr. John Pringle (UK).

Finance Committee

England	...	Dr. Hugh Clegg.
Europe (Continent)	...	Dr. P. Cibrie.
U. S. A.	...	Dr. L. H. Bauer.

The British Medical Association named a Local Arrangements Committee under the Chairmanship of Dr. T. Rowland Hill with Dr. E. Grey Turner, Secretary, and a Ladies Committee with Lady Whitby, Chairman; Miss A. Saxby, Secretary.

The cost of the Conference was estimated at between $25,000 and $50,000·00.

1951-1952

The 13th Council Session named the following to serve on the Medical Education Committee:

Dr. J. A. Pridham (UK) *Chairman*. Dr. J. A. Bustamante (Cuba). Dr. Hugh Clegg (UK). Dr. Leon Gerin Lajoie (Canada). Dr. T. C. Routley (Canada). Dr. S. C. Sen (India). Dr. R. L. Sensenich (USA). Dr. Lorengo Garcia Tornel (Spain).

The Committee continued its study of the excess and shortage of doctors in various countries and continued planning for the international Conference on Medical Education. The Conference date was set for August 1953—the site—London.

The Organizing Committee recommended that the Conference have an Honorary President who is an outstanding figure in general education. Dr. James Bryant Conant, President of Harvard University (USA), was invited to serve in this capacity, but he regretfully declined in view of his other commitments.

The Presiding Officer was to be a leader of medical education; Sir Henry Cohen of Liverpool was replaced in this capacity by Sir Lionel Whitby of Cambridge (UK), because of illness.

Four Vice Presidents were selected to preside over the Sections. A Steering Committee, composed of the Presiding Officer, Vice Presidents and members of the Organizing Committee were charged with coordinating the activities of the Conference during its Sessions.

‡ Vice-Presidents.

A delegation, composed of Drs. P. Glorieux, Dag Knutson, Jean Maystre, T. C. Routley and the Secretary General, Louis H. Bauer were authorized to appear before the Executive Board of WHO to obtain participation and financial support of that organization for the Conference.

1ST CONFERENCE ORGANIZING COMMITTEE MEETING:

A special Meeting of the Medical Education Committee and the Conference Organizing Committee was held in Paris, January 19–20, 1952.

It was agreed that the international Medical Education Congres should be known as "The First World Conference on Medical Education." The aims of the Conference would be:

1. Exchange of ideas
2. Possible unification of ideas
3. Aid to underdeveloped countries

The Conference would be opened with a Plenary Session for orientation purposes. A medical education survey booklet was to be published prior to the Conference to aid in this orientation.

Originally, three Sections were proposed by the Organizing Committee. A fourth was added later. These Sections were:

Requirements for Entry into Medical Schools
Aims and Content of the Medical Curriculum
Techniques and Methods of Medical Education
Preventive and Social Medicine.

It was estimated that the Conference would attract between 350-500 participants, all of whom could be accommodated at the British Medical Association House. A larger hall could be made available if necessary.

Joint Secretariat activity for the Conference was carried on between the WMA Secretariat and the Secretariat staff of the British Medical Association.

The British Medical Association was requested to name the Conference patrons; a Committee of Honor would consist of the co-operating member associations and international organizations.

COMMITTEE ACTIVITY:

The Education Committee recommended that national member associations be urged to adopt the International Code of Medical Ethics and that they recommend that the medical schools in their countries institute courses in medical ethics to assure ethical practice by medical students and doctors.

It also stressed again the importance of obtaining the cooperation and assistance of the general practitioners of the world in planning and carrying out the Medical Education Conference.

2ND MEETING OF CONFERENCE ORGANIZING COMMITTEE:

The registration fee for the Conference was set at 3 guineas. Dr. Hugh Clegg was named Chairman of the Editorial and Publicity Committee. Invitations to the Conference were issued to:

National member associations and the individuals they requested to be invited;

In combating anaemias

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Vitamin B_2	1 mg.
Niacinamide	10 mg.
Vitamin B_6	0·5 mg.
Panthenol	1 mg.
Folic Acid	1 mg.
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Vitamin C	20 mg.
Ferrous Sulphate (Exsiccated)	100 mg.
Cobalt Nitrate	5 mcg.

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CHLOROFORM	B.P.	130	,,
SODIUM CITRATE	B.P.	324	,,
FLAVOURED SYRUP BASE			q.s.

DOSAGE : Adults :—1 or 2 teaspoonfuls every 2 or 3 hours.

PACKING : 4 ozs. & 16 ozs. BOTTLES.

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COMPOSITION PER OZ. PER TABLET

Streptomycine Sulphate	B.P.	0.3 GM.	0.020 GM.
Sulphadiazine	B.P.	2.0 GMS.	0.125 GM.
Pectin	N.F.	0.1 GM.	0.006 GM.
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Bismuth Carbonate (Extra Light)	B.P.	1.5 GMS.	0.100 GM.
Cocoa Base	Q.S.		... ...

Powder Packing : Carton of 1 oz. & 2 oz.

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Deans of medical schools and faculties of the world;
Participating organizations, and the individuals they recommended.

3RD MEETING OF CONFERENCE ORGANIZING COMMITTEE :

The Vice Presidents were named to preside over the sections; the Oxford Press was being approached relative to publishing the proceedings of the Conference; a trade exhibit limited to educational materials was being planned; the program was beginning to take shape and become firm; and a banquet and excursion in connection with the Conference was planned.

Registrants were defined :

"Any doctor in good standing in a member national medical association of The World Medical Association is eligible to register at the Conference.

"Anyone who is interested and pays the registration fee may be registered at the Conference at the discretion of the Registration Officer."

The registration fee was increased from 3 guineas to 4 sterling. The finances for the Conference showed that $1,100·00 had been collected from the Canadian and Philippine Medical Associations; and $18,000·00 had been obtained from private organizations in the United States. The World Health Organization had pledged $5,000 in services and CIOMS $2,000 toward simultaneous translation costs.

The Organizing Committee agreed that an honorarium would be provided for invited speakers from economically poor or medically underdeveloped countries. Each honorarium was determined on an individual basis.

1952-1953

The 16th Council Session named the following to serve on the Medical Education Committee :

Dr. J. A. Pridham (UK) *Chairman*. Dr. J. A. Bustamante (Cuba). Dr. Hugh Clegg (UK). Dr. Leon Gérin Lajoie (Canada). Dr. P. Glorieux (Belgium). Dr. S. C. Sen (India). Dr. R. L. Sensenich (USA). Dr. Lorenzo Garcia Tornel (Spain).

4TH MEETING OF CONFERENCE ORGANIZING COMMITTEE :

English, French and Spanish were made the official languages of the First World Conference on Medical Education.

By March, 1953, about 60 per cent of the invited speakers for the Conference had been obtained; a Rapporteur was named for each of the four Conference Sections; and the financial report showed that $48,822·00 had been obtained for the Conference fund and the Organizing Committee allocated $12,000·00 honoraria for invited speakers.

Council criticism of the list of speakers invited for the Conference pointed out that there was lack of balance between those from the United Kingdom and North America as compared with the rest of the world. However, the Secretary of the Program Committee and Chairman of the Organizing Committee informed Council that this was the result of :

(a) Member associations failing to submit lists of competent speakers; and

(b) The failure of the member associations not adequately represented in the speaker-distribution to notify the Program Committee that it approved having the speaker(s) nominated by the Conference Committee, invited to participate in the Medical Education Conference.

5TH MEETING OF CONFERENCE ORGANIZING COMMITTEE :

The last meeting of the Conference Organizing Committee was held the day before the Conference opened. It approved the plans of the Local Arrangements Committee; accepted necessary readjustments of program and speakers; and reviewed the financial status of the Conference fund. The proceedings were taken on tape recordings—originally planned to be only in English but actually were taken in the original language of the speaker.

FIRST WORLD CONFERENCE ON MEDICAL EDUCATION

Venue—London, England—British Medical Association House, and Friends' House.

Dates—August 22-29, 1953.

Theme—Undergraduate Medical Education.

Patrons—The Earl of Athlone, Chancellor of the University of London. Mr. James Stuart, Secretary of State for Scotland. Miss Florence Horsbrugh, Minister of Education for England and Wales. Mr. Iain Macleod, Minister of Health for England and Wales.

Collaborating Organizations—The World Health Organization. The Council for International Organizations of Medical Sciences. The International Association of Universities.

President—Sir Lionel Whitby (UK).

Deputy President—Prof. W. Melville Arnott (UK.)

Conference Sections—A. Requirements for Entry into Medical Schools : Vice-President—Dr. Victor Johnson (USA).) Rapporteur—Dr. Raymond Whitehead (UK). B. Aims and Content of the Medical Curriculum : Vice-President—Sir A. L. Mudaliar (India). Rapporteur—Dr. A. Morgan Jones (UK). C. Techniques and Methods of Medical Education : Vice-President—Prof. A. Hurtado (Peru). Rapporteur—Prof. Ian Aird (UK). D. Preventive and Social Medicine : Vice-President—Prof. A. Stampar (Yugoslavia). Rapporteur—Dr. Charles Fletcher (UK).

Registration—August 22-23, 1953 and throughout week of August 24-29, 1953. Registration provided the participants with a printed handbook of the Conference; suitable badge; general information and maps of London and its environs; tickets to Conference functions; and information service including banking facilities, travel and theatre ticket service; postal service; arrangements for visits to medical schools, hospitals and clinics in and around London.

Program—August 24th—Opening Ceremonies and Plenary Session. Addresses of Welcome. Presidential Address with a Response. Addresses with Responses on : "What is Education?" "The History of Medical Education". "Medicine—A Technology or a Profession". August 25-28—Section Meetings. August 28-29—Concluding Plenary Session. Reports

from Sections by: Vice-Presidents; Rapporteurs. Closing Ceremonies.

Section A—Requirements for Entry into Medical Schools had twelve (12) subtopics with 34 invited speakers from 13 countries;

Section B—Aims and Content of the Medical Curriculum had eighteen (18) subtopics with 35 invited speakers from 14 countries;

Section C—Techniques and Methods of Medical Education had nineteen (19) subtopics with 34 invited speakers from 13 countries;

Section D—Preventive and Social Medicine had seventeen (17) subtopics with 34 invited speakers from 13 countries.

Total Statistics—

Program included:	
Topics	69
Invited Speakers	134
Countries of Speakers	30
Attendance included:	
Participants	625 (approx.)
Accompanying persons	225
Countries represented	62
Universities & Faculties represented	127
Simultaneous Translation Team:	
Entire Conference	7
Sectional Meetings	25

Exhibitions:

Film—Four medical education teaching films were shown during the luncheon recess.

Technical—There were 27 technical exhibits of textbooks and teaching aids.

Time Schedule—The Conference was in Session a total of 5 days; there were two full day Plenary Sessions and three days devoted to Sectional discussions. Morning and afternoon refreshment intervals were provided.

Social Programme:

General—In addition to the Conference banquet on the night before the final Plenary Session, the Social Program included: A "get acquainted" reception on the first evening of registration day; A whole day excursion to Cambridge University on the day before the Conference opened; Receptions by H. M. Government, the University of London, Medical Women's Federation, and London County Council; An excursion down the River Thames to see the city of London on the second afternoon of the Sectional Meetings.

Ladies—In addition to attendance at the general social functions, the Ladies Committee provided a program for those who accompanied the Conference participants. This included a Ladies Club where special attention was given to individual interests and request; a "get acquainted" sherry party; tours of London museums, parks, shops and stores; fashion show; and visits to interesting London Houses and in the homes of the members of the Ladies Committee.

Language—the official languages of WMA.

Finance:

Income—		
Cooperating organizations—		
WHO	$ 5,000	
CIOMS	$ 2,000	
WMA	$ 5,600	
		$12,600
WMA Member Associations		$ 4,135
Individual and Firms*		$ 3,500
USA Foundations, Firms, etc.		$37,400
Exhibit (net)		$ 1,971
Registration Fee		$ 4,188
TOTAL		$63,794
Expenditure (approximate)†		
Simultaneous Translation—		
Equipment	$ 2,700	
Personnel	$ 9,334	
		$12,034
Recording—Equipment, Labour and Translations		$ 1,262
Rent of Hall		$ 1,444
Speakers—Travel and Per Diem		$ 7,481
Printing, invitations, handbook, etc.		$15,740
Personnel, clerks, translators, etc.		$14,662
Postage and Express		$ 373
Badges and Publicity		$ 720
Social Programmes		$ 3,184
Miscellaneous		$ 540
Proceeding Publication Fund		$ 5,000
TOTAL		$62,440

Proceedings—*The Proceedings of the First World Conference on Medical Education* were published by the Oxford University Press and became available in the Fall of 1954. The papers presented at the Conference were published *in toto* in the language of presentation followed by abstracts in the other two languages. The book, 820 pages of approximately 300,000 words, was bound with a hard cover; printed in 1,467 copies; and cost $7,982·80. 196 free copies of the Proceedings were distributed to national member associations, collaborating organizations, Conference officials and benefactors, and copies for review. The remaining copies were placed on sale at £3 ($8·40) per copy. Royalties to The World Medical Association amounted to approximately $4·20 per copy.

COMMITTEE AND ASSEMBLY CONSIDERATION

The International Federation of Medical Students Associaton approached the Council for assistance in publishing a survey it had carried out on medical education. The Committee was invited to study this survey and recommend action to Council.

The Chairman of the Organizing Committee of the First World Conference on Medical Education presented a final report on the Conference to the General Assembly

* (Other than USA).

† Does not include Secretariat expenditure for postage, cables and Executive personnel.

which included a brief survey of the findings of the Conferences and its recommendation that a similar Conference be organized in a few years.

The Medical Education Committee recommended that the member associations name committees to study the Proceedings of the First World Conference with a view toward presenting recommendations for the next Education Conference. This was approved by the Council and General Assembly.

The Council disapproved a recommendation that the Medical Education Committee carry on a detailed study of all the papers presented and the transcripts of the verbatim proceedings of the First World Conference on Medical Education.

The Medical School Survey containing reports of 15 member associations was released for publication under the joint sponsorship of WMA and WHO.

1953-1954

The nineteenth Council Session named the following to serve on Education Committees :

Medical Education Committee :

Dr. J. A. Pridham (UK), *Chairman*. Dr. Leon Gérin Lajoie (Canada). Prof. Dr. L. A. Hulst (Netherlands). Dr. Austin Smith (USA). Dr. Lorenzo Garcia Tornel (Spain).

Medical Education Conference Committee :

Sir Lionel Whitby (UK), *Chairman*. Dr. Hugh Clegg (UK).

The Medical Education Conference Committee was charged with the responsibilities of (a) compiling the Proceedings of the First World Conference on Medical Education and (b) planning a future Medical Education Conference.

At the 20th Council Session, these two Committees were amalgamated under the Chairmanship of Sir Lionel Whitby who was elected to fill the Casual Vacancy resulting from the resignation of Dr. J. A. Pridham as a Council member.

The Committee recommended that the Survey on Medical Education carried out by the International Federation of Medical Students Association be mimeographed for them in English only at the Secretariat and the copies transmitted to IFMSA for distribution.

Consideration was given to scheduling the Second World Conference on Medical Education approximately 5 years after the First Conference (1958 or 1959). Additional suggestions heard relative to the Second Education Conference were :

Venue—North America;

Theme—Undergraduate Education for General Practice and Occupational Health Services;

Programme guidance should be obtained from the Vice-Presidents of the First Conference; member association Educational Study Committee; and if possible, regional Study Committees;

WHO and other international organizations should again be invited to participate; and

The organizing and Programme Committee of the Second Education Conference should be named at once.

These recommendations and suggestions were adopted in principle by the General Assembly.

1954-1955

The 22nd Council Session named the following to serve on the Medical Education Committee :

Sir Lionel Whitby (UK), *Chairman*. Dr. Hugh Clegg (UK). Dr. E. S. Hamilton (USA). Dr. Leon Gérin Lajoie (Canada). Prof. Dr. L. A. Hulst (Netherlands). Dr. Lorenzo Garcia Tornel (Spain).

The Committee recommended that the Programme Committee of the Second World Conference on Medical Education give consideration to including a topic on "Vocational Rehabilitation of the Disabled"; that, if approved by the American Medical Association, the Second Conference be scheduled in Chicago, Illinois prior to the 13th General Assembly in 1959; that the American Medical Association be authorized to name the President and a Programme Committee for the Conference; and that WHO, CIOMS and IAU be invited to participate in the forthcoming Conference. Council agreed that the International Federation of Medical Students Association be kept informed as to the plans of the Second Conference.

A member association request that The World Medical Association undertake a programme to promote doctor exchange for purposes of advanced medical education was referred to the Committee for study and recommendation.

FIRST CONFERENCE PROCEEDINGS AND REPORTS

Sales of the *Proceedings of the First World Conference on Medical Education* were reported as having netted £679 making a cash balance in the Education Conference fund of £1,784.

Eleven member associations had indicated that Committees were preparing reports on the Proceedngs with their recommendations as to topics for the Second World Conference on Medical Education.

1955-1956

The 25th Council Session named the following to serve as Committee members :

Sir Lionel Whitby (UK) *Chairman*. Dr. J. A. Bustamante (Cuba). Dr. Hugh Clegg (UK). Dr. Leon Gérin Lajoie (Canada). Dr. E. S. Hamilton (USA). Prof. Dr. L. A. Hulst (Netherlands).

ADVANCED EDUCATIONAL EXCHANGE PROGRAMME

The Committee recommended and Council adopted a plan to implement the member association resolution that The World Medical Association sponsor an educational exchange programme for advanced medical education of doctors. The Secretary General was instructed to send the resolution to all member associations requesting each associaton to keep the Secretariat currently informed of the opportunities for foreign doctors to receive advanced medical education within the country. Member associations were informed that this information would be compiled at the Secretariat and upon the request of the member associations wishing to assist their doctors to find suitable foreign educational opportunities, pertinent information would be put at their disposal by the Secretariat.

It was noted that the Secretariat had been carrying on a placement service of this type on a small scale with several hospitals in the United States that had desired foreign doctors for advanced training. The two hospitals that had received foreign doctors regularly were the Lousie Obici Memorial Hospital in Suffolk, Virginia and Nassau Hospital in Mineola, New York.

SECOND WORLD CONFERENCE ON MEDICAL EDUCATION

The American Medical Association accepted the Committee recommendation that the venue of the Second World Conference be Chicago, Illinois and set the dates of the Conference for August 30—September 4, 1959. Noting the decision of the Council to devote the Conference considerations to Postgraduate Medical Education, the American Medical Association at Council request nominated the following officers and Committee members for the Conference :

President—Dr. Raymond B. Allen, Chancellor, University of California in Los Angeles (USA).

Deputy President—Dr. Victor Johnson, Director of Mayo Foundation for Medical Education and Research, University of Minnesota, Graduate School of Medicine (USA).

Programme Commttee (Leaders in Medical Education in the American Medical Association and the American Association of Medical Colleges) :

Dr. Victor Johnson, *Chairman*. Dr. Edward L. Turner, *Secretary*. Dr. Donald G. Anderson. Dr. Raymond B. Allen. Dr. Ward Darley. Dr. Stanley R. Dorst. Dr. James M. Faulkner. Dr. Edward Grzegorzewski (WHO). Dr. E. S. Hamilton (WMA). Mr. H. M. Keyes (IAU). Dr. Vernon W. Lippard. Dr. George F. Lull. Dr. Robert A. Moore. Dr. Myron Wegman (WHO and PASB). Dr. Herman Weiskotten. Dr. Maurice B. Visscher (CIOMS). Dr. John B. Youmans. Dr. Louis H. Bauer (WMA).

The Programme Committee had met and recommended that the Conference theme be :

Medicine—A Lifelong Study.

Tentatve programme plans included having Opening and Closing Plenary Sessions of a day each separated by three days of Section Meetings. Four Sections were considered, namely :

I. Basic Clinical Training for All Doctors.
II. Advanced Education for General and Speciality Practice.
III. The Development of Teachers and Investigators.
IV. Continuing Medical Education.

With Council approval, it was proposed that the Canadian Medical Association be invited to nominate medical educators to be named as a second Deputy President and at least one Rapporteur.

Two Vice-Presidents and one Rapporteur were to be named for each Section; the eight Vice-Presidents from the various areas of the world exclusive of North America; the four Rapporteurs from North America.

The official languages would be English, French and Spanish and if feasible, German.

The Palmer House had adequate facilities to accommodate 1,000 participants at the Conference and was obtained for the Conference. Visits to medical schools, hospitals, etc. would be arranged by a Local Committee to be named at a later date with additional Committees for specific aspects of the Conference as needed. Detailed consideration of the following items was postponed :

Film and Technical Exhibits.

Social Programme.

Publicaton of Proceedings.

The budget of the Second World Conference on Medical Education was set at $178,000. Preliminary plans of a campaign to raise these funds were made and initial efforts started for the fund drive. It was noted that the Executive Board of the World Health Organisation expected to recommend that its Health Assembly allocate $10,000 to the costs of the Conference.

Dr. Edward L. Turner, Secretary of the Conference Programme Committee, was coopted as a member of the Medical Education Committee.

The Xth General Assembly approved the tentative plans of the Medical Education Committee for the Second World Conference on Medical Education and agreed that the Committee be designated as the Orgánizing Committee for the Conference. The Delegates expressed a deep desire that the Conference would aim at and result in indicating the best and most efficient method of postgraduate education, especially in regard to keeping the busy practitioner abreast with medical progress.

1956-1957

The 28th Council Session named the following to serve on the Medical Education Committee :

Sir Lionel Whitby (UK), *Chairman*. Dr. J. A. Bustamante (Cuba). Dr. Leon Gérin Lajoie (Canada). Dr. E. S. Hamilton (USA). Prof. Dr. L. A. Hulst (Netherlands). Dr. M. Poumailloux (coopted) (France). Dr. E. L. Turner (*Ex officio*) (USA).

The untimely death of Sir Lionel Whitby in November, 1956, left a vacancy on the Committee which was filled by Dr. Hugh Clegg (UK). Prof. Dr. L. A. Hulst (Netherlands) became Chairman of the Committee.

The Committee had been instructed to give consideration to the trend in certain countries to divide the medical license or create degrees of medical qualification and to make recommendations on this situation to Council. However, at its Meeting during the 29th Council Session, insufficient information was available and the Committee postponed final consideration and recommendations until there was sufficient documentation on the subject.

SECOND WORLD CONFERENCE ON MEDICAL EDUCATION

The Committee reviewed a draft programme submitted by the Conference Programme Committee and recommended that preventive medicine be included in all Section consideration; that at one of the Plenary Sessions, "International Cooperation in Post-graduate Education" be discussed; that the plan of the Programme Committee to provide adequate time for open discussion be commended; and that with the addition of these suggestions, the draft programme be approved.

The Canadian Medical Association had submitted nominations for a Deputy President, and Dr. Ray F. Farquharson, Sir John and Lady Eaton Professor of Medicine, University of Toronto (Canada) had been so named.

The Programme Committee had requested the Education Committee to advise it on the problem of nomenclature and terminology used in the English, French and Spanish speaking countries in connection with postgraduate medical education. The Education Committee noted that the systems of postgraduate education in vogue in the Anglo-American, French, Spanish and German medical education systems were so entirely dissimilar that it would be necessary to list the four (4) sets of terms and definitions for use in the programme.

The Committee recommended to Council and Council agreed that the verbatim tape recordings of the Proceedings of the First World Conference on Medical Education be held for the time being by the British Medical Association. Decision as to the permanent retention and place of storage was deferred for future consideraton.

Preliminary announcements relative to the Second World Conference on Medical Education had been issued by the Secretariat to national member associations, the deans of the medical schools and faculties of the world and interested international organisations.

Invitations to national medical associations, invited speakers and participants, accompanied by a printed Provisional Programme and an answer sheet upon which the member associations could submit ther programme suggestions to the Programme Committee were to be issued before the end of the year. The Programme Committee stressed its desire to have the invited speakers truly representative of the medical profession of the world through the interest and cooperation of the national member associations .

NOTES AND NEWS

World Conference on Medical Education

The Second World Conference on Medical Education, scheduled to convene in Chicago, Illinois, U.S.A., August 30 to September 4, 1959, will consider the theme "Medicine—A Lifelong Study". This theme is the logical sequel to the 1953 London Conference at which undergraduate medical education was discussed.

The application of educational methods in efficiently and efficaciously aiding every doctor to increase his knowledge of medical science concomitantly with the modern advances in medical science is one of the basic aims of the Programme Committee. The scope of the programme will include specialist training, the development of teachers and investigators and means by which the practitioner can avail himself of the newest findings for the use in the medical care he gives his patients.

Approximately 100 invited speakers from more than 50 countries will present papers at the Conference. Simultaneous translation for English, Spanish and French will facilitate the discussions of the world's leading medical educators, investigators and practitioners as they considered the problems, programmes and standards of advanced medical education. The President is Dr. Raymond B. Allen, Chancellor, University of California, Los Angeles, U.S.A.

The Conference is being organised and sponsored by The World Medical Association. Collaborating organisations include: The World Health Organisation, The Council for International Organisations of Medical Science and The International Association of Universities. The American Medical Association is the host organisation. Information relative to the programme participation and invitations can be obtained from: The World Medical Association, 10 Columbus Circle, New York 19, New York (U.S.A.).

Central Repository for Medical Credentials

Dr. Louis H. Bauer, Secretary General of The World Medical Association, has announced that on July 1, 1958, the facilities of a Central Repository for Medical Credentials became available to the doctors of the world.

Information relative to the facilities and methods by which doctors could employ the services of the Repository were issued in May. During June, the Secretariat of The World Medical Association, United States Committee, Inc., issued individual announcements of this service to a cross-section of selected doctors in the United States in order to sample test the doctor-interest in such a service. As of July 1st, more than 20 per cent of the test group had indicated a desire to avail themselves of the protection the Repository offered for their medical credentials.

At the 107th Meeting of the American Medical Association in San Francisco, California, June 23-27th, the attention of the members of this Association was invited to the new protective service being offered by The World Medical Association. The founders of the service believe it to be an important "insurance" for doctors but realise that education and promotion will be required among the doctors and medical students in all countries—but especially in those that have been spared the ravages of war, revolution and dictatorship.

New President of American Medical Association

Dr. Gunnar Gundersen of La Crosse, Wisconsin, was inaugurated as the 112th President of the American Medical Association at the Association's 107th Annual Meeting held June 23-27, 1958. In his inaugural address, he called upon the members of the Association and all doctors of the world to provide the spark of leadership in advancing medical statesmanship which must be used to augment the methods of political diplomacy. "To physicians everywhere, atomic energy means a new way of fighting disease, not a way of conquering the world. Medicine exists to save life, not destroy it."

He observed that The World Medical Association is a main avenue for mobilising and co-ordinating world medical resources for the common good of humanity.

Dr. Gundersen has served on the Council of The World Medical Association since 1953, and as its Vice-Chairman during 1955-56.

Indian Council for Child Welfare

The Indian Council for Child Welfare held a Press Conference in New Delhi on the 30th June 1958, with a view to acquaint the representatives of the press with

some of the recent activities of the ICCW and for seeking their co-operation in stirring official and public conscience to children's needs.

Smt. Indira Gandhi, Vice-President and Chairman of the Standing Committee, ICCW, stated that it was regrettable that not much had been done during the past decade to promote child welfare in the country. She added, "there was widespread apathy in regard to the needs of the children. Lofty statements are often made about the 'citizens of the future', but little concrete planning or deep interest in substantial work for children is evident."

The highlights of the points presented at the Press Conference by the ICCW, were :

1. There is need for the enactment of a uniform Law for children for the entire country.

2. The ICCW is of the opinion that every State must first have the minimum institutions so that when law comes into force, it can be implemented.

3. A blue-print for child welfare, to form a part of the third Five Year Plan, must be prepared immediately.

4. ICCW is gravely concerned about the reported activities of kidnapping gangs in the country.

ICCW recommends the creation of a Parliamentary Body for Child Welfare to expedite bills, pending questions relating to the child and the drastic new legislation if necessary to eliminate social evils of increasing magnitude such as kidnapping of innocent children.

5. There is need for permanent sources of funds for voluntary bodies.

In the opinion of ICCW a special stamp cess should be levied expressly devoted to the work for children all over the country.

Smt. Tara Ali Baig, the Honorary General Secretary, ICCW, acquainted the Press with the recent survey of the correctional institutions for children in Delhi by the ICCW and the Plan which it had drawn up in two phases (temporary and permanent) for the proper institutional care of children in Delhi.

BMA Awards

The Council of the British Medical Association announces that it is prepared to consider the award of two prizes : one, the Occupational Health Prize, established for the purpose of encouraging interest and research in the field of occupation health; and two, the Katherine Bishop Harman Prize, established in 1926 for the encouragement of research into the disorders incident to maternity.

The Occupational Health Prize is open to any member of the BMA enaged in the practice of occupational health either whole-time or part-time and consists of a certificate and £50 in 1959. Entries in the shape of unpublished study or essay should be submitted in a form suitable for publication and must include personal observations and experiences collected by candidates themselves.

The Katherine Bishop Harman Prize is valued at £75 and is open to any registered medical practitioner in the British Commonwealth and Empire or the Republic of Ireland and any member of the BMA wherever resident. The prize will be awarded to the best contribution (not previously published) submitted, competitors being free to choose the work they wish to present, provided this falls within the scope of the Prize.

For both prizes preliminary notice of entry is required on a form of application to be obtained from the Secretary, BMA. No awards will be made if entries are not of sufficient merit. Contributions should preferably be between three and ten thousand words, though no limits have been laid down.

Contributions for any of the prizes must reach the Secretary, BMA House, Tavistock Square, London, W.C. 1 not later than 31st January, 1959.

Dr. S. N. Bhansali Charitable Trust Prize

The Bombay Obstetric and Gynaecological Society, Bombay, invites essays or theses on "Any Original Work on Human Sterility" for the award of Dr. S. N. Bhansali Charity Trust Prize. The prize competition is open to all the registered medical graduates throughout India. The prize is worth about Rs. 500/-. There are two prizes, one for the year 1956 and one for the year 1957.

The envelope containing the thesis essay should state on top the year for which the entry is submitted. The entries should reach the Society's office by 1st November, 1958.

Full details and rules governing the ward may be had from the Hony. Secretary, Bombay Obstetric and Gynaecological Society, Purandare Griha, Chowpaty Sea Face, Bombay 7.

Raptakos Medical Research Board Fellowships

The Raptakos Medical Research Board in a notification says that it will consider applications for the award of Fellowships for research work on medical and allied subjects in recognised institutions situated in the Union of India.

The awards normally consist of Rs. 3,000/- per year for a Fellowship and Rs. 750/- per year towards special equipment or chemicals approved by the Board.

Applications for grants for the year commencing January 1, 1959, should reach the Secretary and Treasurer, Raptakos Medical Research Board, Dr. Annie Besant Road, Worli, Bombay 18, before September 30, 1958.

New Reactor to Aid Medical Research and Treatment in U.S.A.

A nuclear reactor which is expected to play an important role in research and teaching programmes at American hospitals and medical schools is nearing completion at the Massachusetts Institute of Technology. It is the first reactor in the United States with a medical room located directly beneath the source of radiation. This will make it possible to place a patient on an operating table so as to use the beam, directed through an aperture from above with the greatest effectiveness when radiation therapy is indicated.

Scientists will fuel the reactor with uranium 235. By mid-summer it should be helping researchers find the answers to problems in physics, chemistry, biology and many other fields beside medicine.

For radiation therapy, the reactor will produce either neutrons or gamma rays. Physicians are especially inter-

ested in the "slow neutrons"; it will send odwn into the medical room. These do not damage tissue as some other forms of radiation do. However, the neutrons will effect the action of certain chemicals. For instance, a victim of brain tumour will receive an injection of boron, a chemical which collects in brain tumour tissue. The neutrons from the reactor will cause this boron to emit alpha particles. These particles travel only a fraction of a centimeter before they decay, but in that distance they will destroy cancerous cells in the tumour. The process, developed by a research team at Harvard University Medical School has already been used at the Brookhaven National Laboratory, another centre for the peaceful use of atomic energy.

Elaborate precautions are being taken to safeguard patients, doctors and the surrounding neighbourhood from dangerous radiation.

Training Course in Family Planning

A two-month training course for doctors, public health nurses, health visitors and social workers in family planning will begin at the Family Plalnning Training and Research Centre, Bombay, on August 27, 1958. This will be the second course at the centre which has planned to organise four during 1958-59. The first course is now in progress and the third and fourth will begin on December 3, 1958, and February 25, 1959 respectively.

The course is open to registered practitioners in modern medicine, qualified nurses and health visitors and medico-social or social workers with a Master's degree or diploma in social science of a recognised University.

Candidates sponsored by Central and State Governments, Local Bodies and voluntary organisations will be admitted to the course on the understanding that they will serve the authorities concerned for a period of at least three years.

Trainees will be paid stipends by the Government of India at the rate of Rs. 150 per month for medical officers, Rs. 100 per month for social workers and public health nurses and Rs. 75/- per month for health visitors and field workers.

The last dates for receiving applications for the third and fourth courses are October 20, 1958, and January 10, 1959, respectively. Applications for the second course closed on July 15.

D.T.M. & H. Course at Calcutta

The nine months' course of instruction for the D.T.M. & H. Examination under the Calcutta University will begin on the 15th October, 1958. This course is open to medical graduates of Indian Universities or candidates possessing equivalent qualifications recognised by the Calcutta University for the purpose, who have been engaged in medical practice for a continuous period of at least 15 months or held residential appointment in a teaching hospital for at least one year. Applications for admission in the prescribed form (obtainable from the School office) should reach the Director, School of Tropical Medicine, Calcutta, by the 31st August, 1958.

CORRESPONDENCE

The Editor is not responsible for the views expressed by the correspondents.

"Malaria Survey"

SIR,—Kindly refer to column 1 on page 375 of the June 1, 1958 issue of your journal.

On this page, the first sentence under the heading 'Malaria Survey' reads as under :—

"The four-member survey party, headed by Dr. C. P. Nair, Director, Malaria Institute of India, which visited the Laccadives, Minicoy and Aminidive group of islands has returned."

Dr. Nair is an Assistant Director of the Malaria Institute of India, and *not* Director as printed in the abovementioned sentence.

I am etc.

Malaria Institute of India,
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REVIEWS

A Mental Health Handbook—By Ian Skottowe, M.D., M.R.C.P., D.P.M. Board bound with paper jacket, 8¼" x 5¼", 196 pages. Published 1957 by Edward Arnold (Publishers) Ltd., London; price 21*s.* net.

Mental health services are nowadays expanding rapidly; and hence it is becoming increasingly evident that, in addition to the general practitioner and the psychiatric specialist, doctors, social workers, health visitors and others in the public health departments will have increasingly important functions in furthering social action towards the prevention and treatment of mental ill-health. The author seems to have succeeded well in his main aims of the book : firstly, to present an indication of the trend of developments of mental health services and an outline of present knowledge of mental health and mental illness, paying special attention to social factors and the possibility of influencing these and other factors by social action. The other aim of the author in writing this book, also well fulfilled, is to suggest ways in which individuals and authorities in various localities might set about finding the detailed arrangements likely to suit them best for setting up or expanding an efficient day-to-day service. The human personality, with its constitution, gifts, handicaps and proclivities, is perhaps the heart of mental health; and the author has devoted considerable space to this and to the impact of nurture, natural experience and social culture upon it. In suggesting practical steps towards prevention and treatment, the author has rightly adopted the general principle of making better use of what we have and what we know, rather than embarking on questionable or costly ventures. This book is likely to prove quite useful to doctors, social workers, health visitors and others for whom it is primarily intended.

Pathology—Edited by W. A. D. Anderson, M.A., M.D., F.A.C.P., F.C.A.P. Third edition, 1957. Board bound, 10½ × 7½ inches, 1402 pages with 1294 illustrations and 11 colour plates. The C. V. Mosby Company, St. Louis, U.S.A. Price $16·00.

First published in 1948, this book has already passed through two editions and it is a pleasure to welcome and review another edition of it. The general plan of the book in this present, the third, edition seems to have covered the subject very thoroughly within the limits of a single volume. Although some subjects have been significantly shortened, the number of illustrations has been increased. The bibliographies, which are indeed extensive, have been brought up-to-date. The author rightly states that the size and scope of the extensive coverage of the book for the undergraduate medical student is justified where the teacher of pathology executes his true functions of guiadnce, interpretation, stimulation and encouragement. The author believes that a factual and orderly presentation of pathology should be of use to a beginner under the proper guidance of a teacher, as well as to a more advanced student. The text is lucid and well-presented with the help of a large number of very good illustrations reproduced in clear outline. Thoroughly recommended to students of pathology, not excluding the teachers.

World Medical Periodicals—Second edition, prepared by L. T. Morton under the auspices of a Committee jointly sponsored by the World Medical Association and the International Union of the Medical Press. Published October 1, 1957, by the World Medical Association; 10 Columbus Circle, New York 19, N.Y., U.S.A. Editorial Office: British Medical Journal, B.M.A. House, Tavistock Square, London, W.C. 1, England. Board bound, 9¼ × 6½ inches, pp. 340; price 30s. or $6·00 net.

A few years ago, the Natural Sciences Division of UNESCO concerned itself to the problem of abstracting in the medical and biological sciences. For this purpose, a Co-ordinating Committee was established later on. It was soon realised that little headway would be made in the co-ordinating of abstracting activities unless the various agencies could agree on the standardisation of certain details of the work. The Co-ordinating Committee finally decided to follow the rules introduced by the World List of Scientific Periodicals. Later on, the two bodies, UNESCO and WHO jointly published the World List of Abbreviations to make it useful to medical workers, editors and librarians. This list includes titles of all current medical periodicals which have been traced, all medico-biological periodicals regularly surveyed by certain abstracting agencies, and well-known medical journals which ceased publication during 1900-1950. By arrangement with the UNESCO and WHO, the responsibility for publication of this second edition has been assumed by the World Medical Association. This new edition includes titles of journals of medicine, pharmacy, odontology and veterinary medicine which were in existence in 1957, together with those well-known journals which have ceased publication since 1900. The list has been made more useful by grouping the entry-numbers in the subject index under countries, and, where possible, by giving the address of the publisher of each title. New appendixes give (1) a list of some of the principal international abstracting journals, and (2) a list of the principal indexing journals. This book should prove very valuable to medical and allied workers, authors, editors and to libraries.

OBITUARY

Dr. Munna Lal Bagh

Dr. Munna Lal Bagh was born in Ajmer in 1897. He was educated at Government College, Ajmer and at the Agra Medical School from where he qualified as an L.M.P. in 1920. Dr. Bagh served in the U.P. and Bikaneer State Medical Services but finally set up private practice in Ajmer, his home town.

DR. MUNNA LAL BAGH

A doctor of the poor in Ajmer and the villages all round, Dr. Bagh was a popular figure for his various activities. He was one amongst the founder members of the Ajmer-Merwara Medical Association which later became the Ajmer Branch of the Indian Medical Association.

Dr. Bagh died of coronary occlusion on the 8th February 1958 at Pushkar. He was 61.

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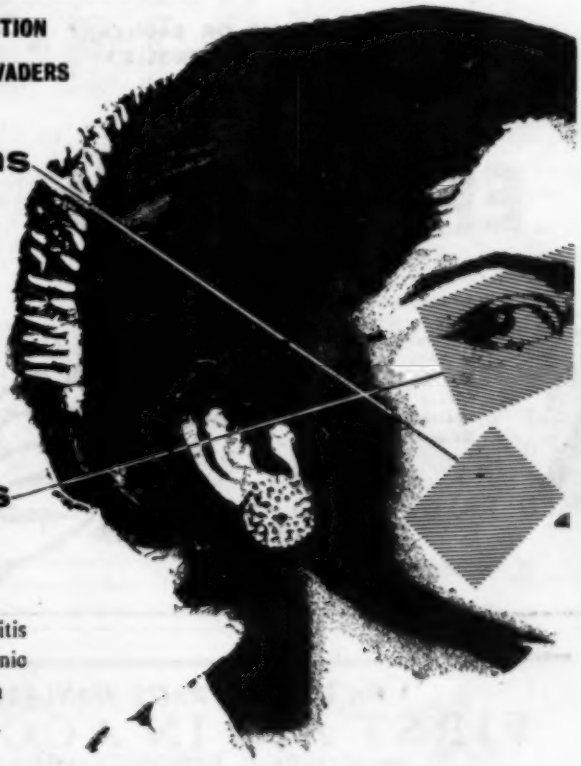

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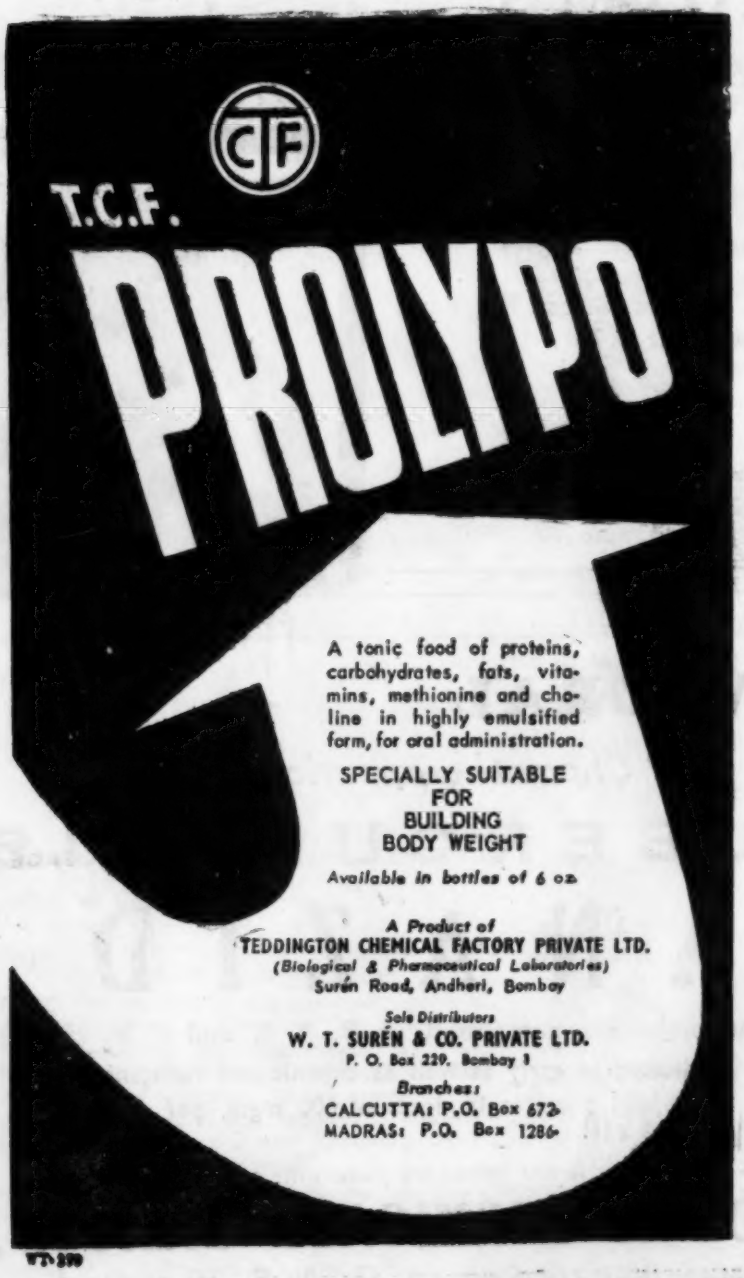
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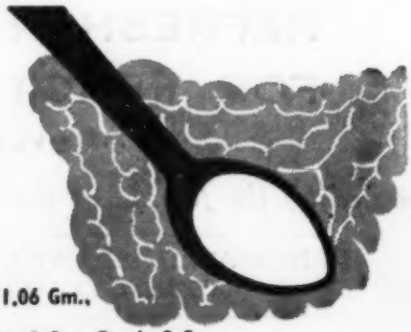

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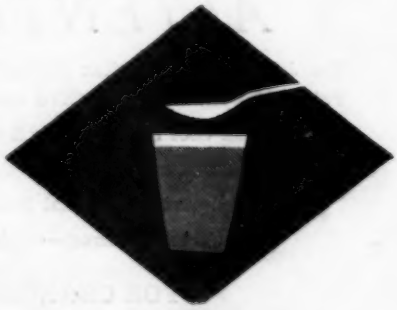

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